

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

SUBJECT: Virginia Gas Company, UIC Permits **DATE:** 4-22-96
VAS3G931BSMY and VAS1X932BSMY

FROM: Lillie R. Ellerbe (3WP32)
Environmental Protection Specialist

TO: File

The subject company has submitted a Surety Performance Bond, dated July 18, 1995, No. 66-0130-54812-95-0, issued through the United States Fidelity & Guaranty Company, Richmond, Virginia for Crestar Bank. The total sum of the bond is for \$90,000 which covers (6) underground injection wells - three Class IIIG and three Class 1X. This Surety Performance Bond was accompanied by a Standby Trust Agreement.

Our standard model language was used in both these instruments. United States Fidelity & Guaranty Company is listed as an approved surety company and Crestar Bank is listed in the Polk's Bank Directory and is certified and is examined and regulated by a State or Federal Agency.

The financial responsibility demonstration as submitted is accepted as meeting the federal guidance for these types of underground injection wells.

Virginia
Gas
Company

P.O. Box 2407 • Abingdon, VA 24212 • 703-676-2380 • Fax 703-676-0151

August 14, 1995

Mr. Stephen Platt
US EPA Region III / UIC Program (3WM43)
841 Chestnut Street
Philadelphia, PA 19107

Dear Mr. Platt:

Please find enclosed two copies of our Area Permit Application for your review. This area application is for the permitting of three Class I-I disposal wells and three Class III-G solution mining wells.

It is my understanding that after a 3-4 week review period, the EPA will give public notice of the project with a thirty day period to solicit comments. If necessary, a hearing would then be scheduled.

VGC is currently anticipating performing Mechanical Integrity Tests on the existing CH-16 and CH-20 within the next 3-4 weeks. As soon as we have a scheduled date, we will contact you with as much advanced notice as possible.

If you have any questions or comments, please feel free to call. I look forward to hearing from you.

Sincerely,


Lydia Sinemus



1096 Ole Berry Drive
Abingdon, VA 24210
Tel: (276) 676-2380
Fax: (276) 619-5234
www.nui.com

NUI Corporation (NYSE: NUI)

February 7, 2003

Mr. Stephen Platt
Environmental Protection Agency
SDWA (3WP32)
1650 Arch Street
Philadelphia, PA 19103

Dear Mr. Platt:

The enclosed data is being submitted as the fourth quarterly and final report for the brine re-circulation operations at the Saltville Gas Storage Facility in Saltville, VA. Comments are provided at the bottom of each monthly report. Re-circulation operations were completed on October 29, 2002 and we continued to monitor the pressures on weekly basis for the months of November and December.

The company would also like to formally request that the Class 1X Injection well permit for EH-131 be terminated at this time. We may wish to include this well under our Class IIIG injection well permit VAS3G931BSMY at a later date.

Furthermore, we would like to request that the use of the remaining two Class 1X Injection wells under permit number VAS1X932BSMY be utilized on existing Brine Wells CH-11 and CH-12 for calcium sulfate disposal, which is purged from the Evaporator Plant as result of the ongoing gas storage and de-brining operations. See the attached preliminary operations plan and existing well casing schematics for Cavern Wells CH-11 and CH-12. A complete operations, well integrity testing, and monitoring plan will be supplied for your review and approval as outlined in permit VAS1X932BSMY before proceeding.

We would also like for your agency to provide information on the type of permit(s) that would be required to re-inject brine into our gas storage caverns. The intent of brine re-injection would be to displace gas during peak demand and maintain minimum operating pressures. Brine would be removed from associated storage caverns during gas re-injection periods. Please call so that we may discuss.

Please be advised that our mailing address has changed and any future correspondence or mailings should be sent to the following address;

Virginia Gas Company
1096 Ole Berry Drive
Abingdon, VA 24210

NUI Companies and Affiliates:

City Gas Company of Florida
Elizabethtown Gas
Elkton Gas
North Carolina Gas
NUI Capital Corp.

NUI Energy
NUI Energy Brokers
NUI Energy Solutions
NUI Environmental Group
NUI Telecom

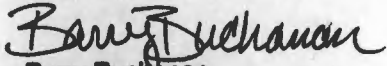
Tic Enterprises, LLC
Utility Business Services
Valley Cities Gas
Virginia Gas
Waverly Gas

10 wells
18-23

February 7, 2003

Please contact me if you have any questions or if I can be of further assistance.

Sincerely,

A handwritten signature in cursive script that reads "Barry Buchanan".

Barry Buchanan
Environmental Compliance Officer

Attachments: Brine Re-circulation Data for November and December 2002.
Preliminary Operations Plan for wells CH-11 and CH-12 and well casing schematics.

c: Tim Ferguson; Dave Mize, Scott Hill, Dan Sutton, Mike Foster (without attachments).

BRINE RE-CIRCULATION DATA

Month: December-02



Day	WELLHEAD PRESSURES (PSIG)						ANULAR PRESSURES (PSIG)									FLOWRATE (GPM)			POND "A" DISCHARGE SALINITY (%)		
	CH-23		CH-22		CH-18		CH-23			CH-22			CH-18			MIN	MAX	AVG	MIN	MAX	AVG
	MIN	MAX	MIN	MAX	MIN	MAX	13 3/8"	9 5/8"	5 1/2"	13 3/8"	9 5/8"	5 1/2"	13 3/8"	9 5/8"	5 1/2"						
1																					
2	260	260	260	260	380	380	400	320	440	350	330	370	300	230	0	0	0	0	0	0	0
3																					
4																					
5																					
6																					
7																					
8																					
9	280	280	260	260	380	380	390	325	380	370	340	460	360	250	0	0	0	0	0	0	0
10																					
11																					
12																					
13																					
14																					
15																					
16																					
17	260	260	260	260	390	390	400	310	330	370	340	520	300	270	100	0	0	0	0	0	0
18																					
19																					
20																					
21																					
22																					
23	320	320	320	320	270	270	380	320	390	380	340	440	310	210	0	0	0	0	0	0	0
24																					
25																					
26																					
27																					
28																					
29																					
30	225	225	230	230	200	200	390	250	330	380	260	365	220	220	110	0	0	0	0	0	0
31																					

*Interpolated Data

Comments: Continued to monitor wellhead pressures after ceasing recirculation.

BRINE RE-CIRCULATION DATA



Month: November-02

Day	WELLHEAD PRESSURES (PSIG)						ANULAR PRESSURES (PSIG)									FLOWRATE (GPM)			POND "A" DISCHARGE SALINITY (%)		
	CH-23		CH-22		CH-18		CH-23			CH-22			CH-18			MIN	MAX	AVG	MIN	MAX	AVG
	MIN	MAX	MIN	MAX	MIN	MAX	13 3/8"	9 5/8"	5 1/2"	13 3/8"	9 5/8"	5 1/2"	13 3/8"	9 5/8"	5 1/2"						
1																					
2																					
3																					
4	255	255	260	260	380	380	380	315	380	325	320	415	140	290	0	0	0	0	0	0	0
5																					
6																					
7																					
8																					
9																					
10																					
11	260	260	260	260	380	380	260	260	380	340	340	420	280	140	0	0	0	0	0	0	0
12																					
13																					
14	255	255	255	255	380	380	390	318	385	325	325	380	160	295	0	0	0	0	0	0	0
15																					
16																					
17																					
18																					
19																					
20																					
21																					
22																					
23																					
24																					
25	255	255	260	260	380	380	390	320	405	350	325	360	200	295	20	0	0	0	0	0	0
26																					
27																					
28																					
29																					
30																					
31																					

*Interpolated Data

Comments: Continued to monitor wellhead pressures after ceasing recirculation.

BRINE RE-CIRCULATION DATA



Month: October-02

Day	WELLHEAD PRESSURES (PSIG)						ANULAR PRESSURES (PSIG)									FLOWRATE (GPM)			POND "A" DISCHARGE SALINITY (%)		
	CH-23		CH-22		CH-18		CH-23			CH-22			CH-18			MIN	MAX	AVG	MIN	MAX	AVG
	MIN	MAX	MIN	MAX	MIN	MAX	13 3/8"	9 5/8"	5 1/2"	13 3/8"	9 5/8"	5 1/2"	13 3/8"	9 5/8"	5 1/2"						
1	420	420	420	425	335	335	485	345	75	450	390	180	340	0	0	0	0	0	0	0	0
2	420	420	420	425	330	335	300	360	280	360	380	300	360	0	0	0	0	0	0	0	0
3	420	420	420	420	330	340	300	360	340	320	380	320	360	50	0	0	0	0	0	0	0
4	200	420	200	420	340	780	300	360	340	280	380	330	360	60	0	93	100	98	97	98	98
5	200	200	200	200	780	780	400	330	470	280	360	410	360	260	80	80	94	85	96	98	97
6	200	200	200	205	780	785	300	320	320	320	320	310	300	320	450	75	83	80	96	100	99
7	210	560	205	550	220	785	640	640	1000	490	400	1000	210	190	0	32	133	75	62	100	93
8	220	210	220	220	770	780	510	320	0	500	360	100	340	210	460	84	95	88	97	100	100
9	220	220	220	220	775	780	360	320	160	380	340	360	310	210	460	76	88	81	96	98	97
10	220	220	220	220	660	790	320	320	320	360	340	400	300	180	420	62	83	77	96	98	97
11	210	540	220	520	220	780	320	320	340	360	340	46	300	180	420	32	133	76	94	98	96
12	210	300	210	300	410	780	380	320	60	520	360	140	360	50	300	85	100	94	95	97	96
13	200	205	200	210	770	790	500	320	170	590	340	380	310	140	260	78	89	81	97	100	99
14	220	560	225	560	220	780	600	580	0	420	380	0	230	100	0	32	135	72	67	99	94
15	225	230	230	230	765	770	520	340	50	500	360	100	340	25	0	77	90	82	90	100	95
16	230	230	230	230	765	775	500	330	330	540	340	420	320	0	0	70	76	73	93	97	96
17	230	230	230	230	775	779	420	320	380	360	340	420	310	0	0	68	74	72	96	98	97
18	220	600	220	600	220	785	360	320	420	380	340	420	300	0	0	34	134	77	75	99	95
19	250	250	250	250	750	760	400	360	300	440	380	380	360	60	0	92	98	95	92	98	97
20	200	200	205	205	760	790	420	375	550	360	350	610	55	355	20	87	92	90	100	100	100
21	200	200	200	205	720	780	430	320	500	380	330	490	300	50	0	72	79	74	99	100	100
22	200	220	200	205	780	790	400	320	400	390	320	420	300	50	0	71	79	75	96	100	100
23																					
24																					
25																					
26																					
27																					
28																					
29	260	260	260	260	380	380	400	310	370	320	320	410	290	110	0	0	0	0			
30																					
31																					

*Interpolated Data

Comments: **10/7** - Gauges pegged on 5-1/2" for CH-22 and CH-23. Injection pressures normal. High pressure due to air inside of the casing.
10/23 - Brine re-circulation through the lower bench wells suspended. Debrining of upper bench wells CH-25/26 begins.

400 GPM Evaporator Plant Purge Disposal

01/30/2003

Virginia Gas Company proposes to build a new state-of-the-art salt crystallization plant at its Saltville Virginia Gas storage facility. Calcium sulfate (CaSO_4), calcium chloride (CaCl_2) and magnesium chloride (MgCl_2) are by-products of brine evaporation when crystallized salt is the desired finished product. Excessive concentrations of these impurities in the crystallization system adversely affect the ability to operate and efficiency of the system; therefore these impurities must be purged from the crystallizer and disposed of.

Depositing these impurities in a mature salt cavern is the standard method of disposal in the salt industry. The following description and principles of operation is for a system that would utilize caverns #11 and #12 for purge disposal.

System Principles of Operation

A hydro-clone located between and connected to the suction and discharge piping of the crystallizer/main heater circulation pump will purge a calcium sulfate, calcium chloride and magnesium chloride rich brine stream from the crystallizer. The calcium sulfate will be in the form of insoluble crystals while the calcium chloride and magnesium chloride will be a liquid solution.

The purge will flow through a plate and frame type heat exchanger where it will be cooled before being collected in a vented closed-top tank.

The purge-collecting tank (designated CT1) will be fitted with liquid level controls that will add fully saturated brine to the tank to maintain the tank's liquid operating level while a horizontal centrifugal pump continuously pumps the purge from the collecting tank at the crystallizer plant to another vented closed-top collecting tank located adjacent to caverns #11 and #12 approximately 7000 feet from the crystallizer plant.

The collecting tank adjacent to caverns #11 and #12 (designated CT2) will be fitted with on/off liquid level controls that will start a horizontal centrifugal pump that will pump the liquid from the tank when the liquid level in the tank reaches an upper set point and shut the pump off when the liquid level in the tank reaches a low set point. This collecting tank will also be fitted with a high liquid level alarm system that will notify plant production personnel in the event of a higher than normal liquid level in the tank.

The CT2 discharge pump will inject liquid from the tank into cavern #11 where the calcium sulfate, calcium chloride and magnesium chloride will precipitate to the cavern floor. Cavern pressure readings indicate that a flow connection exists between caverns #11 and #12. As the caverns are pressurized, fresh brine will be discharged from cavern #12 and directed into one of the existing brine holding ponds (designated A, B and C).

CEMENT PLUGS

13 3/8" - 9 5/8" ANNULUS
77' - SURFACE
9 5/8" - 5 1/2" ANNULUS
67' - SURFACE
5 1/2" - 2 3/8" ANNULUS
120' - SURFACE

2 3/8" TUBING 517' - SURFACE

2 3/8" TUBING 1164' - 1681'

13 3/8" - 9 5/8" ANNULUS
1347' - 1657'
9 5/8" - 5 1/2" ANNULUS
1507' - 1678'
5 1/2" - 2 3/8" ANNULUS
1498' - 1678'

CASING

20" @ 88"

16" @ 459'

COILED TUBING CLEANED,
CEMENT OUT TO 1603'

13 3/8" @ 1675'
54.5 LB/FT
9 5/8" @ 1850'
43.5 LB/FT
5 1/2" @ 2265'
20 LB/FT

2365' TD

2 3/8" TUBING @ 2270'
4.7 LB/FT

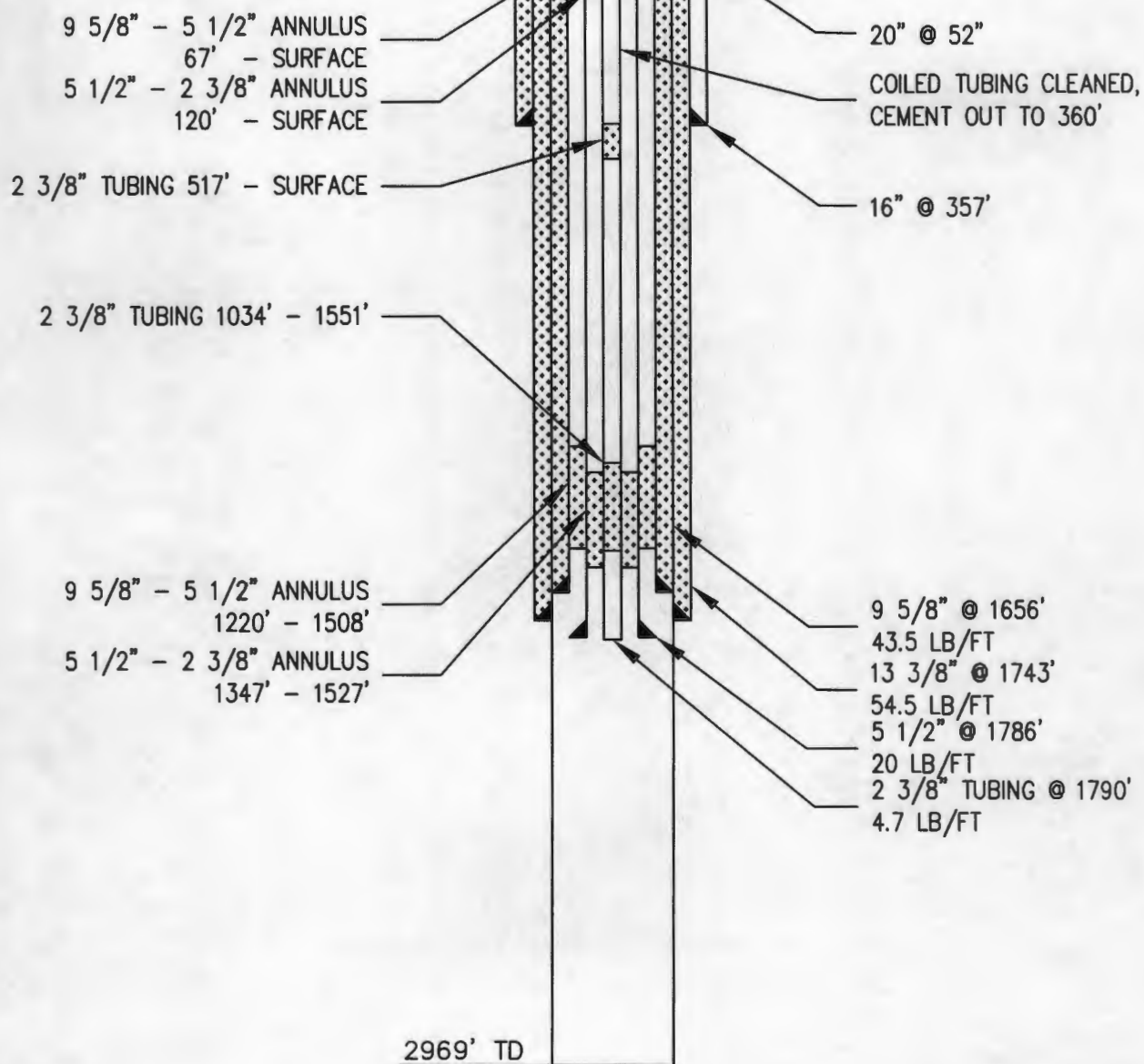
Virginia
Gas
Pipeline
Company

200 East Main St.
Abingdon, VA 24210
(540) 676-2380

CH-11 EXISTING DOWNHOLE SCHEMATIC

CEMENT PLUGS

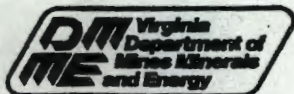
CASING



*Virginia
Gas
Pipeline
Company*

200 East Main St.
Abingdon, VA 24210
(540) 676-2380

CH-12 EXISTING DOWNHOLE SCHEMATIC



Commonwealth of Virginia
Department of Mines, Minerals and Energy
Division of Gas and Oil
P.O. Box 1416; Abingdon, VA 24212
Telephone: (276) 676-5423

Operations Name: Virginia Gas Pipeline Company, EH-131
Permit Number: 2854-02

PLUGGING AFFIDAVIT

STATE OF: Virginia CITY/COUNTY OF: Washington
Name: G. Scott Hill AND Name: Mike Haynes

I being first duly sworn, depose and say that: They are both experienced in the plugging of wells and participated in the plugging work which is the subject of this Affidavit on the referenced well.

THE PLUGGING WORK WAS FOR THE PURPOSE CHECKED BELOW:

- ☒ At the end of production or other use
☐ After drilling, re-drilling or deepening was unsuccessful
☐ Partial plugging from the bottom of the hole to _____ feet below the surface and continued operations by the well operator
☐ Partial plugging from the bottom of the hole to _____ feet below the surface for development as a water well
☐ Re-plug
☐ Plugging of a corehole

THE MANNER OF PLUGGING OR RE-PLUGGING WAS COMMENCED October 10, 2002
ON _____
AND COMPLETED ON October 11, 2002

PLUGGING DETAILS:

TYPES OF MATERIAL USED:

Interval From Bottom Of Hole	Formation(S)	Plugging	Filling	Bridge	Open Hole	Casing Size	Filled Liner
From To							
5750' 5365'	PRICE	CEMENT	-	-	-	4.5"	
5365' 1850'	Price / McCrady	-	6% Gel	-	-	4.5"	
Put 4 1/2" casing @ 1750'							
1850' 1650'	McCRADY	CEMENT	-	-	-	4.5 - 8.625	
1650' 120'	McCrady / Honaker	-	6% Gel	-	-	8.625"	
120' Surface	COPPER RIDGE	CEMENT	-	-	-	8.625"	

(ATTACH PLUGGING DETAILS IN THIS FORMAT AND A WELL SCHEMATIC ON SEPARATE SHEETS)

Finally, if this affidavit concerns a well that was abandoned after plugging, a permanent marker or permanent offset marker has or X has not been erected.

First Signature: [Signature] Date: 10/28/02
Second Signature: [Signature] Date: 10-28-02

Notary:

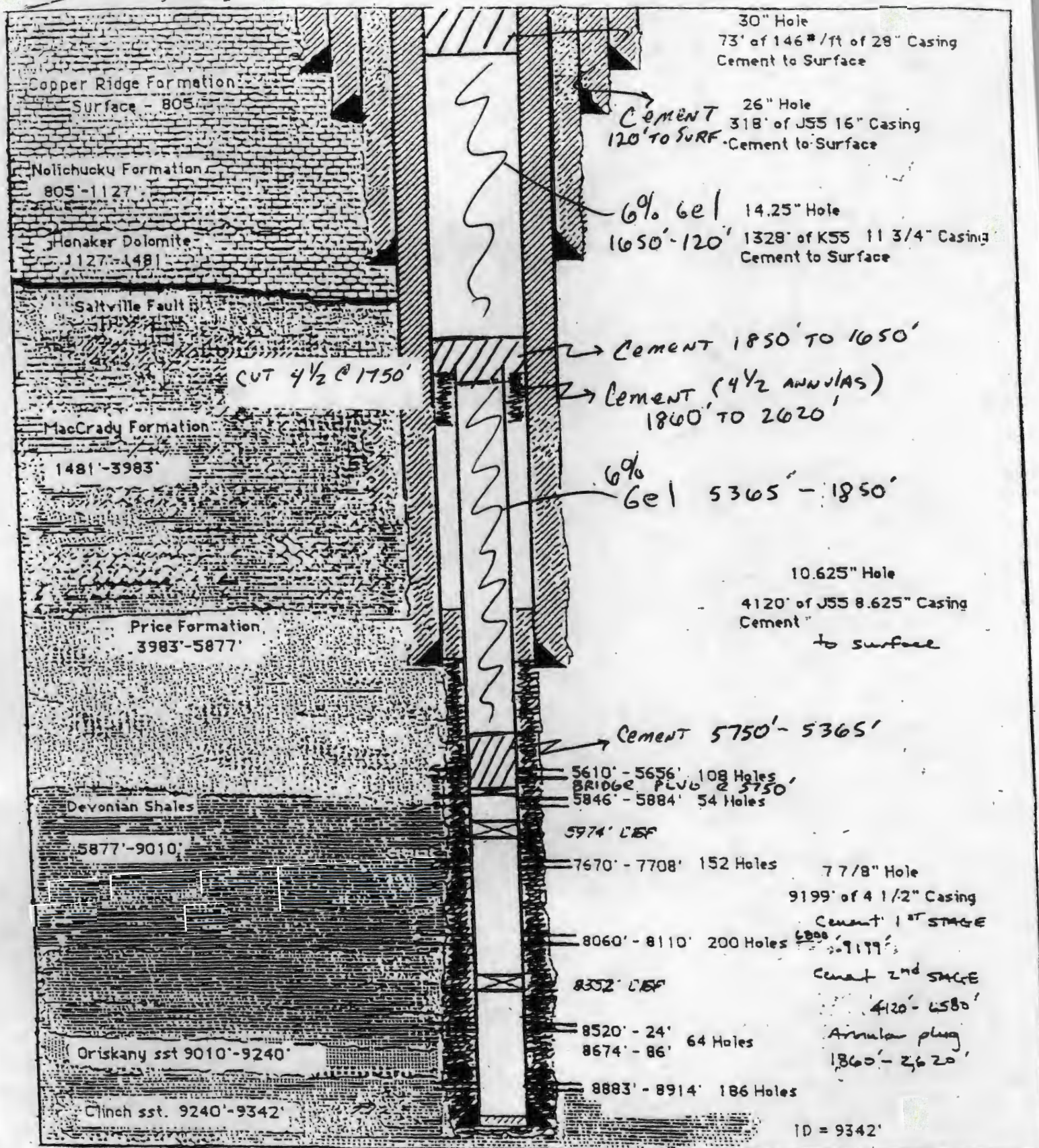
Subscribed and sworn to before me a notary public, in and for the Washington County,
Virginia State, this 28 day of October 2002
(month) (year)

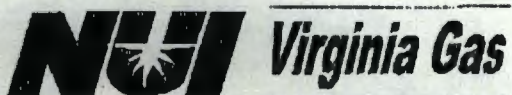
Melinda A. Moore Notary Signature My Commission Expires: September 30, 2005

Form DGO-GO-18
Rev. 11/99



EH-131 WELL SCHEMATIC (AFTER P&A)



Fax

New Ideas. Traditional Values.

To: STEVE PLAT / FAA From: TIM FERGUSON
Fax: 215-814-2302 Date: 9/26/02
Phone: _____ Pages: 5
Re: EH-131 WELL CC: _____

☐ Urgent ☒ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

PAGE 2 - GENERALIZED PLUGGING REQUIREMENTS FROM DIME
PAGE 3 - VAPC PLUGGING PROCEDURE
PAGE 4 - TECHNICAL DATA SHEET FOR PLUGGING PROVIDED TO
DIME
PAGE 5 - WELL SCHEMATIC

PLEASE LET ME KNOW IF YOU HAVE ANY COMMENTS OR
QUESTIONS. (276) 619-5216.

THANKS,
Tim

Phone: 676-2380
Fax: 619-5254

1098 Ole Berry Drive
Abingdon, VA 24210

Generalized plugging requirements for Well EH-131 (Saltville Waste Disposal well):

Permanent Cast Iron Bridge Plug at 8352 (existing);

at least 50'

Permanent Cast Iron Bridge Plug topped with a minimum of 20' of cement at 5974' (CIBP existing);

Minimum 100' cement plug above perfs at 5610';

Perfs @ 5846'-5884'?

Minimum 100' cement plug across 4 1/2" casing stub:

Minimum 50' cement plug at surface.

Gel or other suitably weighted fluid between plugs.

Well will require permit modification to plug.

Bob Wilson 9/23/02

2

95406765459

=> PROJECT MGMT

TEL=15406195231

09/23/02 12:12

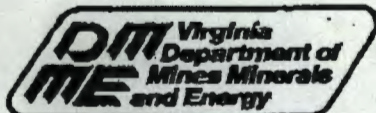


To: File
From: G. Scott Hill
Date: September 24, 2002
Re: EH-131 Plugging Procedure

Plugging Procedure:

- Spot 3 water tanks and 1 lay down mud tank
- Use backwash pump to unload the tank battery (4 tanks) located on the upper bench into the re-circulation caverns on the lower bench.
- Plumb the well to the tanks and flow until exhausted. (One tank is marked clean. Try not to use it.) Haul fluid to the tank battery for temporary storage. Pump into the re-circulation caverns at a later date.
- Move in / rig up
- Release Halco Perma Latch Packer / Pull and lay down 2 7/8" tubing string (5,555')
- Run in hole with tubing string to retrievable plug set at 5,750. May need to use some tubing at the rig. Spot 100' cement plug from 5750' to 5510'. Circulate returns into one of the tanks. (Investigate economics to determine if plug removal is needed instead. Plugging method would change if plug at 5974' were used as the bottom.)
- Cut 4 1/2" casing at ~1750'. Pull and lay down the casing string.
- Spot cement plug from 1750' to 1650'.
- Spot cement plug from 100' to surface.

*Check with DGO on the use of gel between the cement plugs.



Commonwealth of Virginia
Department of Mines, Minerals and Energy
Division of Gas and Oil
P.O. Box 1416; Abingdon, VA 24212
Telephone: (276) 676-5423

Operations Name: Virginia Gas Pipeline Company

TECHNICAL DATA SHEET FOR PERMIT MODIFICATION TO PLUG OR REPLUG

Under Code of Virginia, Section 45.1-361.34, the proposed plugging work is for the purpose checked below:

- ☒ Abandonment of the well or corehole by the operator
- ☐ Re-plugging to permit the safe mining through a well
- ☐ Partial plugging from the bottom of the hole to _____ feet below the surface, with continued operation by the operator
- ☐ Partial plugging from the bottom of the hole to _____ feet below the surface, for development as a water well under Section 45.1-61.39

The date when the plugging or re-plugging is proposed to be commenced 10/1/2002
(day/month/year)

Copies of all logs required to be filed and not heretofore filed with the Inspector are submitted with this form.

PROPOSED PLUGGING PROCEDURE (Hole Schematic Attached)

INTERVAL FROM BOTTOM OF HOLE FROM TO		FORMATION(S)	MATERIALS TO BE USED (CEMENT, GEL, BRIDGES, ETC)	OPEN HOLE DIAMETER	CASING SIZE
5974	5874	Dev. Shale	cement	-	4.5
5874	5610	Price Sand	6% gel	-	4.5
5610	5510	Price	cement	-	4.5
5510	1750	Price/Mcrary	6% gel	Casing stub	4.5
1750	1650	Mcrary	cement		10 5/8
1650	100	Nolichucky/ Copper Ridge	6% gel		10 5/8
100	surface	Copper ridge	cement		10 5/8

FOR OFFICE USE ONLY:

Approved: ☐ Denied: ☐

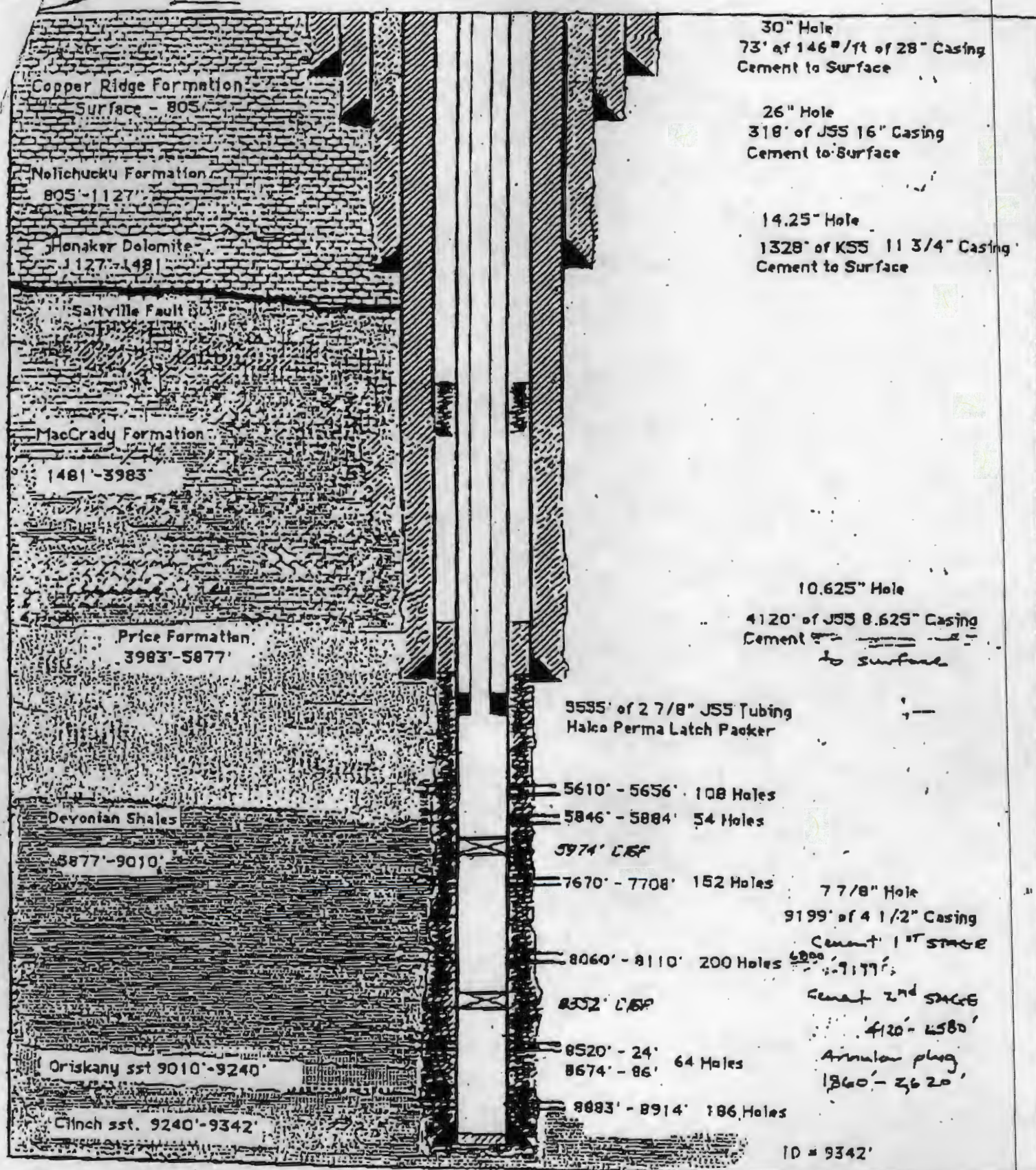
Date: _____
(Division of Gas and Oil Director)

Form DGO-GO-11
Rev. 11/99

4
SP
9/21

Talked to Tim Ferguson on 9/26 +
later confirmed by Scott Hill, VA Gas Co.
on same day:
* Gel will be placed to 5600', ten feet
above perfs (from 5874' to 5600').
* Cement will be placed across 4 1/2" casing
up part (from 1800'-1700').

EH-131 WELL SCHEMATIC



5



200 East Main Street
Abingdon, VA 24210
Tel: (276) 676-2380
Fax: (276) 619-5234
www.nui.com

NUI Corporation (NYSE: NUI)

May 7, 2002

Mr. Stephen Platt
Environmental Protection Agency
SDWA (3WP32)
1650 Arch Street
Philadelphia, PA 19103

Dear Mr. Platt:

The following data is being submitted as the first quarterly report for the brine re-circulation operations at the Saltville Gas Storage Facility in Saltville, VA.

Virginia Gas Pipeline Company began the brine re-circulation project on February 2, 2002. The re-circulation project was debugged and fully operational by February 19th. During the testing and debugging phase, wellhead pressures did exceed the 800-psig restrictions for short periods of time as depicted on the data chart for the month of February. Once the system was operating without any problems, wellhead pressures have been under the 800-psig limitations as indicated on the attached charts. Additional notes for each month are provided in the comments section at the bottom of each monthly data sheet.

To date, the re-circulation project has been a successful and integral part of our operations. The re-circulation process has been able to supply feed brine to the evaporation plant at a much higher salinity value, which in return has prevented the plant from shutting down. Also, being able to re-circulate the brine has provided more brine storage space within the existing ponds, due to the higher consumption rates at the evaporator plant, allowing us to install new liners and covers on two of the three brine ponds at the facility in the coming months making our facility even safer for the surrounding environment.

Please contact me if you have any questions or if I can be of further assistance.

Sincerely,

Barry Buchanan
Environmental Compliance Officer

Attachment: Brine Re-circulation Data for Feb., March, & April 2002.

c: Tim Ferguson; Dave Mize (without attachments)

NUI Companies and Affiliates:

City Gas Company of Florida
Elizabethtown Gas
Elkton Gas
North Carolina Gas
NUI Capital Corp.

NUI Energy
NUI Energy Brokers
NUI Energy Solutions
NUI Environmental Group
NUI Telecom

Tic Enterprises, LLC
Utility Business Services
Valley Cities Gas
Virginia Gas
Waverly Gas

BRINE RE-CIRCULATION DATA



Month: February-02

Day	WELLHEAD PRESSURES (PSIG)						ANULAR PRESSURES (PSIG)									FLOWRATE (GPM)			POND "A" DISCHARGE SALINITY (%)		
	CH-23		CH-22		CH-18		CH-23			CH-22			CH-18			MIN	MAX	AVG	MIN	MAX	AVG
	MIN	MAX	MIN	MAX	MIN	MAX	13 5/8"	9 5/8"	5 1/2"	13 5/8"	9 5/8"	5 1/2"	13 5/8"	9 5/8"	5 1/2"						
1																					
2	600	600			78	82	480	360	415				300	75	80	100	108	105	100	100	100
3	600	650			80	305	420	340	480				300	80	60	0	120	75	100	100	100
4	685	735			235	315															
5	670	685			325	375															
6	740	740			220	260	400	400	540				380	200	200	80	80	80	54	90	89
7	760	800			220	440	400	420	540				380	210	260	70	100	97	89	89	89
8	780	820			220	465	420	420	520				400	200	260	70	146	105	71	91	81
9	785	800			230	264	450	450	500				420	200	260	73	80	76	91	100	96
10	790	795			240	260	450	450	500				420	200	260	70	74	72	91	100	96
11	790	790			250	255	440	435	470				345	405	180	70	70	70	91	100	96
12	220	220			740	760	460	480	590				360	450	170	60	70	65	91	100	96
13	845	856			240	240	480	480	460				360	460	245	62	98	85	96	100	98
14	843	880			225	243	395	403	245				505	473	445	77	82	80	70	100	85
15	800	845			240	240	420	420	300				480	400	400	70	80	75	70	100	85
16	800	810			240	245	460	430	400				460	320	320	70	80	75	70	100	85
17	720	810			240	245	500	440	460				420	240	280	70	72	71	90	100	95
18	205	720			240	590	440	420	370				410	240	260	35	70	60	90	100	95
19	400	405			650	655															
20	220	665	220	675	240	640	400	460	642	500	420	322	462	190	210	72	86	76	98	100	99
21	645	680	663	680	235	240	405	460	360	0	505	0	455	270	205	77	86	80	100	100	100
22	215	680	220	690	240	760	405	480	400	560	540	695	460	295	210	80	125	92	100	100	100
23	220	620	220	620	240	755	460	480	780	605	505	500	340	460	0	78	93	86	100	100	100
24	620	635	620	640	230	240	400	460	220	520	180	640	460	250	240	80	82	81	100	100	100
25	220	680	220	630	220	660	400	480	440	560	530	370	470	300	240	82	145	113	100	100	100
26	220	230	220	230	440	605	400	450	510	560	480	400	400	300	200	86	103	95	98	100	99
27	220	515	220	515	245	560	420	410	580	570	430	440	350	300	100	56	80	65	94	100	97
28	220	515	220	515	240	580	420	380	660	580	395	495	300	305	0	62	134	103	95	100	98
29																					
30																					
31																					

*Interpolated Data

Comments: Feb. 2 - First attempt at brine recirculation is made. Feb. 3 - System shut down due to pipe blockages at CH-18 pumphouse, turbine meters plugged up (badly damaged). Feb. 6 - Recirculation resumes, brine return pump by-passed temporarily with hoses. Feb. 12 - Hard pipe installed by-passing return pump. Feb. 19 - Recirculation shut-in for pressure observation. Feb. 20 - Recirculation resumes using CH-22.

BRINE RE-CIRCULATION DATA



Month: March-02

Day	WELLHEAD PRESSURES (PSIG)						ANULAR PRESSURES (PSIG)									FLOWRATE (GPM)			POND "A" DISCHARGE SALINITY (%)		
	CH-23		CH-22		CH-18		CH-23			CH-22			CH-18			MIN	MAX	AVG	MIN	MAX	AVG
	MIN	MAX	MIN	MAX	MIN	MAX	13 5/8"	9 5/8"	5 1/2"	13 5/8"	9 5/8"	5 1/2"	13 5/8"	9 5/8"	5 1/2"						
1	220	225	220	225	530	570	440	330	360	580	360	400	320	302	0	70	89	75	100	100	100
2	220	485	220	485	240	520	600	340	300	520	320	390	510	0	0	47	70	54	98	100	100
3	219	222	225	230	580	608	380	360	0	500	405	0	480	365	0	77	113	91	72	100	96
4	225	225	230	230	580	590	475	345	540	480	360	255	340	320	0	74	81	76	98	100	100
5	225	660	230	645	240	590	505	325	400	480	360	255	290	315	0	33	76	56	93	100	100
6	220	680	220	675	240	780	340	440	0	480	480	0	440	340	0	78	168	109	90	100	96
7	220	230	220	235	720	725	420	420	680	450	420	480	425	400	0	86	92	90	100	100	100
8	225	700	225	700	240	725	510	415	520	450	440	385	410	0	0	67	184	107	73	100	95
9	220	230	225	230	685	725	440	490	690	480	480	520	360	10	0	111	161	131	100	100	100
10	220	225	220	225	700	710	495	385	540	480	415	390	710	365	0	97	108	102	100	100	100
11	220	225	225	225	710	725	505	370	425	450	400	330	400	355	0	95	102	99	100	100	100
12	220	660	225	660	240	730	520	370	395	450	400	315	400	365	125	65	101	80	100	100	100
13	220	220	220	220	720	740	420	455	0	480	500	0	420	425	300	110	155	128	90	100	98
14	220	220	225	225	415	710	500	385	570	450	410	405	420	380	175	85	107	93	100	100	100
15	220	645	225	655	220	680	510	350	420	400	380	310	420	350	175	61	94	80	100	100	100
16	220	220	220	220	595	730	440	435	150	480	476	130	420	420	340	109	141	121	91	100	99
17	220	620	220	610	220	785	320	355	510	480	455	380	405	400	110	70	135	104	95	100	99
18	185	220	195	225	425	720	510	380	495	450	435	372	390	380	200	108	111	109	98	100	100
19	195	670	200	660	220	680	520	350	420	450	415	325	375	360	290	65	106	73	100	100	100
20	220	680	220	680	215	710	500	420	320	400	395	290	350	410	340	80	165	137	100	100	100
21	200	220	205	210	650	710	510	360	440	400	385	240	345	180	300	114	131	123	100	100	100
22	200	615	200	605	220	740	420	340	375	400	380	310	340	80	250	70	158	116	100	100	100
23	200	200	200	205	730	760	510	480	500	400	400	400	375	80	200	120	130	125	100	100	100
24	200	200	210	210	760	760	520	370	420	400	395	330	375	360	170	120	130	122	100	100	100
25	200	660	210	640	220	760	520	365	385	400	395	320	370	360	175	78	124	101	100	100	100
26	205	210	210	220	680	740	490	455	270	400	490	295	365	410	250	122	157	140	100	100	100
27	220	220	220	220	685	685	490	380	480	400	365	300	360	100	720	112	120	116	100	100	100
28	220	220	220	225	665	685	510	355	390	420	385	320	350	345	175	98	108	102	100	100	100
29	225	680	225	670	230	760	520	350	480	420	430	320	340	350	260	60	138	101	100	100	100
30	220	220	220	220	750	760	540	400	330	420	270	300	400	400	280	111	127	117	100	100	100
31	220	225	220	530	755	760	540	400	330	420	270	300	400	400	300	110	113	111	100	100	100

*Interpolated Data

Comments: Mar. 6 - Brine re-circulation pump down 5 hrs. for repairs. (replaced mech. Seal) Mar. 20 - Coriolis meter placed in service.

BRINE RE-CIRCULATION DATA



Month: April-02

Day	WELLHEAD PRESSURES (PSIG)						ANULAR PRESSURES (PSIG)									FLOWRATE (GPM)			POND "A" DISCHARGE SALINITY (%)		
	CH-23		CH-22		CH-18		CH-23			CH-22			CH-18			MIN	MAX	AVG	MIN	MAX	AVG
	MIN	MAX	MIN	MAX	MIN	MAX	13 5/8"	9 5/8"	5 1/2"	13 5/8"	9 5/8"	5 1/2"	13 5/8"	9 5/8"	5 1/2"						
1	220	660	220	645	240	760	540	380	325	320	380	380	420	150		70	110	90	100	100	100
2	208	220	220	230	722	760	510	470	360	360	380		420	150		125	156	140	98	100	100
3	210	215	215	215	710	720	500	380	463	400	360		380	45		112	129	118	100	100	100
4	210	215	215	215	700	710	500	480	360	410	365		400	160		104	112	107	85	100	100
5	225	680	225	675	235	700	510	390	595	420	555		320	335		67	141	103	98	100	100
6	220	225	220	225	675	710	540	380	295	415	245		380	150		106	124	113	100	100	100
7	220	225	220	230	720	720	520	365	330	400	300		360	150		107	116	109	100	100	100
8	222	645	222	640	235	720	520	375	360	400	310		360	150		67	108	90	100	100	100
9	205	210	210	215	755	780	530	375	380	410	320		370	165		126	149	136	93	100	98
10	205	205	215	215	745	755	540	380	410	415	340		380	180		117	130	121	100	100	100
11	205	215	215	220	740	745	505	360	380	400	315		360	195		113	119	115	95	100	99
12	220	675	225	675	230	750	520	380	380	395	320		360	195		60	143	99	90	100	97
13	220	225	220	225	730	750	520	380	380	395	325		360	195		109	124	116	100	100	100
14	220	223	220	230	720	730	380	365	520	400	325		380	215		106	114	109	100	100	100
15	220	435	230	440	240	725	520	363	375	340	318		360	215		55	108	77	100	100	100
16	200	515	205	520	220	560	510	345	240	390	295		340	105		50	109	72	82	99	90
17	205	220	205	210	600	640	605	260	300	350	95		540	490		98	109	103	70	100	95
18	205	220	205	215	520	545	500	250	140	350	125		220	380		37	72	64	100	100	100
19	210	210	215	215	560	575	505	260	160	345	120		200	300		68	80	75	95	100	99
20	210	420	215	420	220	605	500	305	345	340	340		335	210		50	120	72	93	100	98
21	205	205	210	215	580	583	520	320	290	360	250		320	150		85	92	89	100	100	100
22	200	223	210	225	580	760	520	320	300	340	270		300	100		77	92	81	90	93	92
23	360	600	365	600	240	250	510	370	305	370	300		320	50		47	61	51	83	85	84
24	230	240	235	240	660	705	630	300	310	400	110		620	575		92	116	103	90	100	95
25	240	240	240	240	655	710	510	370	280	390	240		235	295		86	92	90	100	100	100
26	200	560	200	560	265	700	500	345	340	375	300		345	500		18	131	87	100	100	100
27	200	220	200	220	680	695	520	340	145	400	95		340	450		95	112	100	100	100	100
28	200	205	200	205	263	680	520	350	300	380	260		340	400		87	95	91	88	92	90
29	220	500	220	500	220	780	510	340	340	380	340		340	350		53	141	102	98	100	99
30	210	220	220	220	715	770	520	460	400	370	670		450	300		106	125	115	100	100	100
31																					

*Interpolated Data

Comments: 1) Gauges submerged due to recent rains and drainage characteristics of the area. Plans are to relocate gauges to a higher elevation and connect to the casing with tubing.



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NUI Corporation (NYSE: NUI)

January 29, 2002

Mr. Stephen Platt
Environmental Protection Agency
SDWA (3WP32)
1650 Arch Street
Philadelphia, PA 19103

Dear Mr. Platt:

This letter shall serve as a follow up response to our telephone conversation on January 23, 2002.

Virginia Gas Pipeline Company is scheduled to begin the brine re-circulation project on February 1, 2002. The re-circulation project shall follow the established operating and reporting conditions as noted in the approval letter received from your office on October 4, 2001.

In addition to the brine re-circulation project, VGPC was also granted authorization from your office to perform stimulation and step-rate testing on certain zones in disposal well EH-131. VGPC has since conducted the tests and concluded that the tested zone of the EH-131 disposal well does not have a suitable flow rate for practical use as a disposal well. I have attached the work record of the testing operations for your files. VGPC plans to continue to monitor the well until the decision is made to plug and abandon or further evaluate additional zones. We will keep you informed of our plans in this regard.

Please contact me if you have any questions or if I can be of further assistance.

Sincerely,

Barry Buchanan
Environmental Compliance Officer

Attachment: EH-131 work record

C: Tim Ferguson; Dave Mize (without attachment)

NUI Companies and Affiliates:

City Gas Company of Florida
Elizabethtown Gas
Elkton Gas
North Carolina Gas
NUI Capital Corp.

NUI Energy
NUI Energy Brokers
NUI Energy Solutions
NUI Environmental Group
NUI Telecom

Tic Enterprises, LLC
Utility Business Services
Valley Cities Gas
Virginia Gas
Waverly Gas

WORK RECORD
Virginia Gas Pipeline – Well EH-131

October 29, 2001 - Monday

Completed rigging up Key Energy service rig. Met with Halliburton and Virginia Gas personnel to discuss brine supply for well stimulation.

Unbolted wellhead flange. Latched onto 2 7/8" tubing and opened packer bypass. Allowed pressures to equalize. Pulled tubing and packer out of well. Sent packer to Halliburton's shop to be re-conditioned. Installed high pressure valve on well.

October 30, 2001 - Tuesday

Rigged up Allegheny Logging truck. Went in hole with Collar Locator and logged from 5800' to 5100'. Located perforations between 5610' and 5656'. No other perforations identified. Ran cast iron bridge plug on electric line and set at 5780'. Tagged bridge plug to be certain it was in place. Pulled out of hole and rigged down logging equipment.

Installed new end connections on 4" suction hoses and connected hoses to three 250 barrel tanks. Filled tanks with brine.

October 31, 2001 - Wednesday

Rigged up Halliburton stimulation equipment. Pressure tested surface piping and connections. Stimulated well as follows:

- ❖ Pumped 150 gallons of 15% FE acid containing 1 gal/Mgal of HAI-OS and 0.25 gal/Mgal Losurf-300.
- ❖ Pumped 1350 gallons of 15% FE acid containing 1 gal/Mgal of HAI-OS and 0.25 gal/Mgal Losurf-300 and 150 7/8" perf balls. (Recorded pressures indicated that only 1 ball seated in perforations.)
- ❖ Displaced acid with 57 barrels of 9.5 lb/gal brine. (Suction hose broke and pumping shut down for about 5 minutes during acid displacement).
- ❖ Surged back well to remove balls from perforations. Shut down for 70 minutes to allow balls to fall to bottom.
- ❖ Pumped 200 barrels of 20# water frac gel containing 2 gal/Mgal Clayfix II, 0.25 gal/Mgal Losurf-300 and 0.1 lb/Mgal GBW-30.

- ❖ Pumped 837 barrels of 20# water frac gel containing 450 sacks Of 20/40 Ottawa Sand, 2 gal/Mgal Clayfix II, 0.25 gal/Mgal Losurf-300 and 0.1 lb/Mgal GBW-30. Average slurry rate was 16.7 BPM and average sand concentration was 1.27 pounds per gallon. Iridium-192 tracer material added during stimulation.
- ❖ Pumped 38 barrels of flush water.

Mgal = 1000 gallons

HAI-OS - Corrosion Inhibitor
 Losurf-300 - Surfactant
 Clayfix II - Clay Control
 GBW-30 - Breaker

Maximum treating pressure spiked at –	4,505 PSI
did not breakdown formation.	
Initial breakdown pressure	- 3014 PSI
Initial Shut In Pressure after acid	- 3128 PSI
Initial Shut In Pressure after stimulation	- 3454 PSI
5-min. Shut In Pressure after stimulation	- 3143 PSI
10-min. Shut In Pressure after stimulation	- 3018 PSI
20-min. Shut In Pressure after stimulation	- 2828 PSI

Two hours after shutting down pumps, well pressure was 1800 PSI. Opened well and flowed back approximately 90 barrels of sand and brine to plastic lined tank. Shut in well pressure 1590 PSI.

November 1, 2001 – Thursday

Used vacuum truck to remove brine from two of the 250 barrel tanks. Moved in 200 barrel open top rig tank. Opened well to rig tank and recovered about 120 barrels of fluid in 4 hours. Received 500 barrel closed frac tank. Opened well to 500 barrel tank.

November 2, 2001 – Friday

Produced 100 barrels of fluid into frac tank in 14 hours. Shut in well, pressure increased to 200 PSI in 45-minutes. Used vacuum truck to empty frac tank. Opened well to frac tank. Released rig crew for weekend. Cumulative fluid produces – 310 barrels.

November 3, 2001 – Saturday

Well flowing to frac tank.

November 4, 2001 - Sunday

Well flowing to frac tank.

November 5, 2001 – Monday

Flowed back 140 barrels of fluid from 11:00 AM on Nov. 2 to 7:00 AM on Nov. 5.

Cumulative fluid produces – 450 barrels.

Shut in well and recorded following pressures:

7:33 AM	0 PSI
7:48 AM	70 PSI
8:33 AM	102 PSI
9:03 AM	105 PSI
9:33 AM	107 PSI

Transferred fluid from rig tank to frac tank. Dug and plastic lined pit next to well. Fluid flow back rate 4 to 5 barrels per hour. Left well open to frac tank.

November 6, 2001 – Tuesday

Recovered 14 barrels fluid in 16 hours. Went in hole with gauge ring on sand line and tagged fill at 5632'. Rigged up to run sand pump. Had to have connection made to attach sand line to pump. Made 6 runs and recovered 18 gallons of sand. Sand removed to depth of 5644'. On last run, sand line was damaged. Installed clamps to secure line for night.

November 7, 2001 – Wednesday

Recovered 12 barrels fluid in 14 hours. Pulled damaged section of line out of well using clamps and winch line. Cut off damaged line and re-attached line to sand pump. Went in hole with sand pump and tagged fill at 5640'. Made 9 runs and recovered 33 gallons of sand. Sand removed to depth of 5664'.

November 8, 2001 – Thursday

Went in hole with sand pump and tagged fill at 5664. Pulled out of hole and laid down sand pump. Installed Perma Latch packer on bottom joint of 2 7/8" tubing. Ran 176 joints of 2 7/8" tubing into well.

Transferred dirty fluid from rig tank to frac tank. Installed filter unit with 1 micron filters in brine supply line. Filtered 70 barrels of brine into rig tank. Mixed 5 gallons of Anhib corrosion inhibitor in tank and pumped 50 barrels into 2 7/8" by 4 1/2" annulus. Set packer at 5523'. Left packer in neutral position. Installed wellhead packoff and flange. Filled rig tank with filtered brine. Ran injection test as follows:

<u>TIME</u>	<u>PRESSURE (PSI)</u>	<u>RATE (GPM)</u>
5:10 PM	0	0
5:20	600	30
5:30	800	25
5:40	900	25
5:50	450	0
6:00 PM	350	0



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Mr. Timothy L. Ferguson, P.E.
Director of Gas Operations
Virginia Gas Pipeline Company
P.O. Box 2407
Abingdon, VA 24212

OCT 04 2001

Dear Mr. Ferguson:

Our office is in receipt of two proposals from the Virginia Gas Pipeline Company. The first proposal involves the injection and production of brine for gas storage development and the second proposal involves the stimulation and retesting of injection well EH-131, permitted under Underground Injection Control (UIC) permit VAS1X932BSMY. We have responded to each of these proposals separately, below.

Gas Storage Development

Virginia Gas Pipeline's gas storage development project proposes to convert existing high pressure brine storage caverns located on Virginia Gas Pipeline property to natural gas storage. This project will consist of several steps. It includes the removal of approximately 600,000 barrels of diluted brine from storage ponds, injecting that brine into the cavern galleries to displace saturated brine, and eventually debrining the cavern galleries sufficiently for the purpose of gas storage. The project is anticipated to last approximately six to seven months.

The obvious intent of this project is to develop the present cavern galleries owned by Virginia Gas Pipeline for gas storage. The UIC program does not specifically regulate gas storage operations. However, because Virginia Gas Pipeline plans to develop these caverns with the injection and removal of brine prior to gas storage, we believe that it is necessary to impose certain operational limitations on the project to ensure the protection of underground sources of drinking water. In addition, due to the relatively short duration of this project, we believe that the most efficient way to allow Virginia Gas Pipeline to proceed with this project is through an "authorization by rule". Therefore, Virginia Gas Pipeline will be required to meet the following operating and reporting conditions throughout the duration of the project.

1. Diluted brine from the storage ponds will be injected into well CH-23 through the 2-3/8 inch tubing and packer installed in the well. The pressure during injection shall be continuously recorded and will not exceed 800 psig at the wellhead.



2. The annulus pressure between the 2-3/8 inch tubing and the 5-1/2 inch casing, between the 5-1/2 inch casing and the 9-5/8 inch casing, and between the 9-5/8 inch casing and the 13-3/8 inch casing, will be monitored continuously with pressure gauges throughout the duration of the project, to ensure no pressure changes and potential leakage from the operation. Any detection of a pressure increase will require the immediate cessation of the operation and an assessment of the possible cause.
3. The volume of brine injected into well CH-23 and produced from CH-18 shall be continuously monitored. The volume and rate of fluid injected shall not cause the 800 psig injection pressure limitation to be exceeded.
4. Monthly reports, detailing the information requested above, shall be sent to EPA on a quarterly basis. These reports will be due ten (10) days after the close of the quarter. The first quarter will be completed 90 days after the commencement of the operation.
5. Authorization for this project will be granted for nine months from the date of the commencement of the operation. After nine months, even if the project is not complete, rule authorization will be revoked and continued operation will require the issuance of a UIC permit.

Well Stimulation and Retest

Injection well EH-131 was permitted under the UIC program in April, 1996 for the disposal of brine produced in association with the development of solution mined gas storage caverns. Prior to the issuance of this permit the well had gone through stimulation and a series of step-rate tests to help determine operational parameters for the well. The operational conditions for this well are contained in the present permit.

Since well EH-131 has been inactive for some time, Virginia Gas Pipeline has proposed to reenter the well, conduct stimulation on the perforated zones in the wellbore and conduct another series of step-rate tests to determine the volume of fluid which can be injected under the specified pressure limitation. Virginia Gas Pipeline has also proposed perforating, stimulating and conducting step-rate testing on an upper zone in the well previously untested.

The proposed stimulation and step-rate testing on the injection zone presently permitted is permissible. During stimulation of an injection zone, the UIC regulations permit the maximum allowable injection pressure to be exceeded, in this case 2250 psig, for a short duration. However, during the proposed step-rate testing, the maximum injection pressure may not be exceeded. Therefore, if a certain volume and rate of injection should cause the maximum injection pressure of 2250 psig to be exceeded, the testing would be required to cease immediately.

The proposed testing of the upper zone (5,182 feet to 5,534 feet) may also be done. However, because well EH-131 was never perforated previously to test the upper zone, testing parameters must be established in order to ensure that the injection zone is not extensively

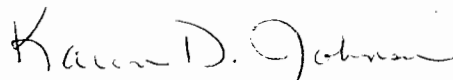
fractured during testing. Step-rate testing may be done in the manner presently proposed (i.e., increasingly greater volumetric rates of injection) to the point where formation breakdown occurs. Once breakdown is achieved, injection must be discontinued and an instantaneous shut-in pressure obtained. Any further testing subsequent to formation breakdown may only take place at a pressure calculated at 75 percent of the instantaneous shut-in pressure. The total volume of fluid injected during testing must not exceed 5000 barrels, with no more than 1000 barrels of fluid being injected during any given 24 hour period. In addition, the total testing period shall be limited to thirty (30) consecutive days from the date testing commences. EPA shall be notified prior to the date testing commences. A report shall be submitted to EPA at the conclusion of the testing summarizing the results.

At the conclusion of testing, if Virginia Gas Pipeline should decide that they want to inject into the upper injection zone or would like to request a change in the maximum injection pressure for their permit, they must notify EPA. Changing the injection zone or the maximum injection pressure in a permit requires a major permit modification, including public noticing with the opportunity for a public hearing if there is significant public interest. If Virginia Gas Pipeline wishes to request a modification to the volumetric permit condition, this may be done through a minor permit modification with no public noticing required.

One final note, if the upper zone in the well is perforated for step-rate testing, and remains open to injection subsequent to this, the permit will require a major modification prior to commencing injection operations. There are several reasons for this: 1) the maximum injection pressure would require adjustment because the pressure is calculated based on the shallowest injection zone, 2) an adjustment to the mechanical integrity test would be required and this would require EPA Director involvement because of the well's configuration (i.e., a simple pressure test could not be performed because of the two perforated zones and the requirement to test the entire well), and 3) the possibility of having to reconfigure the well's construction if injection is desired into both the upper and lower injection zones.

Should you have any questions regarding these testing requirements, please give Stephen Platt of my staff a call at 215-814-5464.

Sincerely.



Karen D. Johnson, Chief
SDWA Branch (3WP32)
Office of Compliance and Enforcement

cc: Bob Wilson
Virginia Division of Gas and Oil

Gene Ford
Resources Services



P.O. Box 2407 • Abingdon, VA 24212 • 540-676-2380 • Fax 540-619-5230

September 13, 2001

Mr. S. Stephen Platt
SDWA Branch (3WP32)
Office of Compliance and Enforcement
United States Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103

Dear Mr. Platt:

Virginia Gas Company (VGC), under permit VAS1I932BSMY, has EPA approval for construction of three brine disposal wells at Saltville, Virginia. Those permits expire in 2006. VGC is hereby submitting a plan to retreat and retest the existing EH-131 test disposal well according to EPA advice in letter to VGC dated December 5, 1996 (attached EPA letter).

Previous testing has indicated that at the reduced rate of 40-60 gallons per minute of injection, brine can probably economically be disposed into the Price Formation in the approved EPA interval from 5,610 to 5,656 feet depth. Based on the accelerated need to remove brine from the caverns during natural gas injection, VGC plans to stimulate perforations in the Price formation. In compliance with the Safe Water Drinking Act, all potable water zones are isolated from the treatment zones by the 8 5/8-inch casing cemented at 4,120 feet.

Methodology

The existing 2 7/8-inch tubing and packer will be removed from well EH-131.

A retrievable bridge plug will be installed at approximately 5,750 feet. At that time, Halliburton will perform the following program (see attached proposal for details).

Halliburton will connect to the wellhead and pump acid through the existing cemented 4-1/2 inch casing. Using a dilute acid and stimulating each perforation by balling out the acid will clear the perforations of cement and will permit brine injection more efficiently into the entire perforated Price interval.

The EPA permitted injection pressure of 2,250 psig will possibly be exceeded for a short time during this stimulation.

Tubing and a packer will be reinstalled above the perforations at 5,610 feet. Before injection testing, the annulus between the 4-½ inch cemented casing and 2 7/8-inch tubing will be pressure tested for integrity at about 2,510 psig for at least ½ hour.

After stimulation, step-rate brine injection testing will be performed thru 2 7/8-inch tubing and packer. Injection of brine will be as before in 1996 and 1997 at 20, 40, 60, and 80 gallons per minute, each rate of injection for one hour and the final 80 gpm injection rate will be held for at least 6 hours.

Additional brine injection rates will be added if injection shows that the EPA limit of 2,250 psig at the wellhead has not been exceeded. Dead weight pressure will be taken at the surface as well as on Halliburton equipment during all phases of the stimulation. During the stimulation period, an ISIP will be recorded according to EPA guidelines.

After stimulation, VGC will request that EPA establish a maximum injection pressure and disposal rate based on the success of the stimulation program.

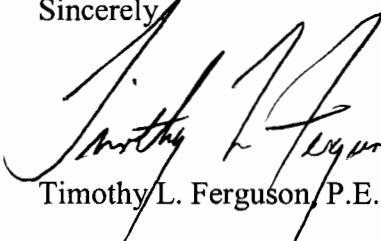
Caveat

Should the 5,610 to 5,656 zones prove not to be viable for brine disposal, the stimulation program will be invoked in selected intervals below 5,162 to 5,400 feet as approved in the December 5, 1996 letter.

Conclusion

Virginia Gas hopes to commence this rework about October 15, 2001. Any questions should be addressed to Gene Ford at 281.578.7323, or geneford@sprint.com. Please contact me at 540.676.2380. Thank you for your cooperation regarding this project.

Sincerely,


Timothy L. Ferguson, P.E.

TLF/sss
Encl.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III

841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

DEC 05 1996

Mr. Al W. Mueller
Virginia Gas Company
P.O. Box 2407
Abingdon, VA 24212

Dear Mr. Mueller:

Your letter of December 3, 1996, submitted to support your request to conduct an injectivity test in the Price Formation, has been reviewed by EPA Region III Underground Injection Control program staff. You are hereby granted permission to conduct this test, utilizing the EH-131 well permitted under UIC permit VAS1X932BSMY, located in Smyth County, Virginia, under the following conditions.

1. Injection Zone - Injection shall occur into the Price Formation through three perforated intervals as follows: between 5846 feet to 5884 feet, between 5610 feet to 5656 feet and between 5162 feet to 5534 feet. Each interval shall be tested separately and a retrievable bridge plug shall be installed below each interval being tested.
2. Test Duration - The injectivity test shall be limited to a maximum of 30 consecutive days.
3. Total Volume Limitation - During the testing period, the total volume of fluid to be injected shall not exceed a maximum of 5000 barrels of brine. In addition, no more than 1000 barrels may be injected during any given 24 hour period.
4. Maximum Injection Pressure - The maximum injection pressure shall be established such that it will not exceed the formation breakdown pressure at each interval tested. Once breakdown is established, the well will be shut-in, an instantaneous shut-in (ISIP) established and the pressure decline monitored for a least one hour.

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5. Injection Fluid - Injection fluid shall consist solely of brine produced from the gas storage caverns Virginia Gas operates. The specific gravity of the fluid shall be determined so that a hydrostatic pressure of the fluid column in the well during injection can be established.

6. Monitoring - Injection volumes and pressures shall be monitored and recorded on a continuous basis.

A final report must be submitted to EPA within 30 days of the conclusion of the test.

Should results of the testing be encouraging, fracture stimulation of one or more of the intervals tested may be considered. Stimulation of the well would be required prior to EPA granting authorization to inject. In addition, based on the results of this testing, it is likely that a modification of this permit will be required so that an accurate maximum injection pressure can be established prior to injection being authorized. A revision of the maximum injection pressure condition of your permit will also require EPA to go through the public participation requirements required by regulation.

If you should have any questions, please give me a call at 215-566-5464.

Sincerely,



S. Stephen Platt
SDWA Branch (3WP32)
Office of Compliance and
Enforcement

JOB SCHEDULE

Customer: Virginia Gas
Well: EH-131
Date: 08/23/2001



Stage Number	Stage Description	Clean Vol				Clean Rate (BPM)	Slurry Vol		Slurry Rate (BPM)	Time Stage (min)
		Volume (gal)	Cum (gal)	Left (gal)	Actual (gal)		Stage (gal)	Cum (gal)		
1	Load	3800	3800	49600		12.00	3800	3800	12	7.54
2	Pre Pad	0	0	45800		0.00	0	0	0	0.00
3	Pad	7000	7000	45800		30.00	7000	7000	30	5.56
4	0.5# PLF	5000	12000	38800		29.33	5114	12114	30	4.06
5	1.0# PLF	20000	32000	33800		28.69	20912	33026	30	16.60
6	1.5# PLF	10000	42000	13800		28.08	10684	43710	30	8.48
7	0# PLF	0	0	3800		0.00	0	0	0	0.00
8	0# PLF	0	0	3800		0.00	0	0	0	0.00
9	Flush	0	0	3800		0.00	0	0	0	0.00
10	Flush	3800	3800	3800		30.00	3800	3800	30	3.02
Totals		49600					51310			45.25

Stage Number	Stage Description	Slurry Density (lb/gal)	Prop Conc (lb/gal)	Stage (lbs)	Proppant Cum (lbs)	Left (lbs)	Actual (lbs)	Prop Num	Base Fluid Density 8.33	
									ABF	Name
1	Load	8.33	0	0	0	37500				
2	Pre Pad	0.00	0	0	0	37500			Prop 1	0.0456
3	Pad	8.33	0	0	0	37500			Prop 2	0.037
4	0.5# PLF	8.63	0.5	2500	2500	37500		1	Prop 3	0
5	1.0# PLF	8.92	1	20000	22500	35000		1		
6	1.5# PLF	9.20	1.5	15000	37500	15000		1		
7	0# PLF	0.00	0	0	0	0		1		
8	0# PLF	0.00	0	0	0	0		1		
9	Flush	0.00	0	0	0	0		1		
10	Flush	8.33	0	0	0	0		1		
Totals				37500						

**Virginia Gas Pipeline Company
Po Box 2407
Abingdon, Virginia 24210-2407**

Well Name: EH-131

Smyth County, Virginia

Disposal Well Stimulation Recommendation

Prepared for: Timothy L. Ferguson

August 8, 2001

Version: 1

Submitted by:

**Halliburton Energy Services
Dan Mullins
(540) 973-1009**



The Future Is Working Together.

***Halliburton appreciates the opportunity to present
this proposal and looks forward to being of service to you.***

Foreword

Enclosed is our recommended procedure for stimulating the referenced well. The information in this proposal includes well data, calculations, materials requirements, and cost estimates. This proposal is based on information from our field personnel and previous stimulation services in the area.

Halliburton Energy Services recognizes the importance of meeting society's needs for health, safety, and protection of the environment. It is our intention to proactively work with employees, customers, the public, governments, and others to use natural resources in an environmentally sound manner while protecting the health, safety, and environmental processes while supplying high quality products and services to our customers.

We appreciate the opportunity to present this proposal for your consideration and we look forward to being of service to you. Our Services for your well will be coordinated through the Service Center listed below. If you require any additional information or additional designs, please feel free to contact myself or our field representative listed below.

Prepared and Submitted by: Dan Mullins
Engineer

SERVICE CENTER:
SERVICE COORDINATOR:
OPER. ENGINEER:

Norton, VA
Andy King (540) 973-1010
Dan Mullins (540) 973-1009



The Future Is Working Together.

Executive Summary

The following is a recommendation for stimulating EH-131 to be used as a disposal well. The formations to be stimulated are at depth of 5,610' – 5,656'. There are a total of 36 perforations in this interval. There is presently 2 7/8" tubing in the hole to 5555' where there is a Halliburton packer. In order to successfully stimulate this formation at the designed rates, without obtaining significant friction pressure, it is recommended that the tubing and packer be pulled from the well during stimulation. When stimulating using proppant in combination with a packer in the hole there is an inherent risk of permanently sticking the packer in the hole.

The following design consists of placing 375 sks of 20/40 Sand, using 50,000 gal of a 20 lb linear gel at 30 bpm. Sand concentration will vary from 0.5 lb/gal to 1.5 lb/gal. The well will be broken down with 150 gal 15% FE Acid followed by 1350 gal 15% FE Acid and 70 perf balls in order to obtain a complete ball-out. After ball-out the well will be surged back a couple of times in order to remove balls from perforations. The well will be shut-in in order for the balls to fall to bottom of well, after which the sand treatment can begin.



The Future Is Working Together.

Well Information

Disposal Well Stimulation

EH-131

Production Casing	0 - 9199 ft (MD)
Outer Diameter	4.500 in
Inner Diameter	4.052 in
Linear Weight	10.50 lb/ft
Casing Grade	J-55
Perforation Interval	5610 - 5656 ft (MD)
Number Of Perforations	36
Shot Density	4 spf



The Future Is Working Together.

Job Recommendation**Disposal Well Stimulation**

Fluid Instructions

20# Water Frac G: (45,800 Gal)

Clay Control	2 gal/Mgal Clayfix II
Surfactant	0.25 gal/Mgal Losurf-300
Breaker	0.1 lbm/Mgal GBW-30

15% Fe Acid: (1,500 Gal)

Corrosion Inhibitor	1 gal/Mgal HAI-OS
Surfactant	0.25 gal/Mgal Losurf-300

Fresh Water: (7,600 Gal)



The Future Is Working Together.

Job Procedure

Disposal Well Stimulation

<u>Stage</u>	<u>Volume</u>	<u>Fluid</u>	<u>Conc.</u>	<u>Proppant</u>
1 - Breakdown	150 Gal	15% Fe Acid		
2 - Acid Ball Out	1,350 Gal	15% Fe Acid		
3 - Displacement	3,800 Gal	Fresh Water		
4 - Surge Well	0 Gal	Allow balls to fall	to bottom of	well.
5 - Load Well/Pad	3,800 Gal	20# Water Frac G		
6 - Pad	7,000 Gal	20# Water Frac G		
7 - Proppant Laden Fluid	5,000 Gal	20# Water Frac G	0.50 lbm/gal	20/40 Ottawa Sand
8 - Proppant Laden Fluid	20,000 Gal	20# Water Frac G	1 lbm/gal	20/40 Ottawa Sand
9 - Proppant Laden Fluid	10,000 Gal	20# Water Frac G	1.50 lbm/gal	20/40 Ottawa Sand
10 - Flush	3,800 Gal	Fresh Water		

Job Summary

15% Fe Acid	1,500	Gal
20# Water Frac G	45,800	Gal
Fresh Water	7,600	Gal
20/40 Ottawa Sand	37,500	lbm
Total Job Volume	54,900	Gal
Total Water Required	54,218	Gal
Total Proppant Quantity	37,500	lbm
Pad Percentage	30.86	%
Job Rate	30	bbl/min



P.O. Box 2407 • Abingdon, VA 24212 • 540-676-2380 • Fax 540-619-5230

July 15, 2001

Stephen Platt
Environmental Protection Agency, Region III
Office of Compliance and Enforcement
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Re: Pressure Monitoring Program

Dear Mr. Platt,

From a letter dated December 15, 1999 and subsequent conversations, a procedure was accepted to monitor well head pressures of Virginia Gas Pipeline Company's static injection Well EH-131 (UIC Permit VAS1X932BSMY) to ensure underground sources of drinking water are not endangered.

The enclosed spreadsheet lists weekly monitored pressures during the second quarter of 2001 (April 1 through June 30).

Feel free to contact me at 1-540-676-2380 if you have any questions.

Sincerely,

A handwritten signature in dark ink, appearing to read "G. Scott Hill". The signature is written in a cursive, flowing style.

G. Scott Hill
Vice President

Enclosure

Quarterly EPA Report

EH-131 Pressure Summary

[illegible]



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III

841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

MAR 24 1997

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Frank Merendino
Vice President
Virginia Gas Pipeline Company
Post Office Box 2407
Abingdon, VA 24212

RE: Underground Injection Control (UIC) Permit Modification,
VAS1X932BSMY

Dear Mr. Merendino:

Enclosed is the executed modification to your final UIC program permit, VAS1X932BSMY, for your three Class 1X injection wells located at the Saltville Storage Project in Saltville, Virginia. Under the provisions of the Federal UIC Regulations at 40 CFR, Section 144 we have approved your documentation to reflect a change in the intended injection zone for the disposal of the brine fluid as well as revise the maximum injection pressure permissible during operation.

These changes are a major modification to the permit and as such required public notification and an opportunity for public comment. EPA published a notice on January 29, 1997 in the Smyth County News & Messenger announcing the permit modification and tentatively scheduling a public hearing for March 11, 1997. EPA reserved the right to cancel this hearing unless a significant degree of public interest was evidenced. This hearing was not held since there was no public interest expressed in the permit changes.





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III

841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

MAR 24 1997

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Frank Merendino
Vice President
Virginia Gas Pipeline Company
Post Office Box 2407
Abingdon, VA 24212

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CONCURRENCES							
SYMBOL	3WP32	3WP32	3WP30	3WP00			
SURNAME	Platt SP	Johnson KS	Amend	Morris			
DATE	3/20/97	3/20/97	3/20/97				



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III**

841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

JAN 28 1997

Mr. Frank Merendino
Vice President
Virginia Gas Pipeline Company
Post Office Box 2407
Abingdon, Virginia 24212

**RE: Underground Injection Control (UIC) Permit Modification and Transfer of Ownership -
VAS1X932BSMY**

Dear Mr. Merendino:

Your request to modify and transfer the ownership of your UIC permit, VAS1X932BSMY, has been reviewed for completeness in accordance with UIC regulations. Under the provisions of 40 CFR, Section 144.38, we have approved your documentation to transfer the ownership of the above UIC permit to the Virginia Gas Pipeline Company. The transfer of responsibility, coverage and liability from Virginia Gas Company to Virginia Gas Pipeline Company is effective as of the date of this letter.

EPA has also approved the modification to your permit to reflect a change in the intended injection zone for the disposal of the brine fluid as well as revise the maximum injection pressure permissible during operation. However, before this approval is finalized, UIC regulations at 40 CFR, Section 144.39, require that a public notice must be issued announcing this requested change in order to give interested parties an opportunity to comment on this amendment to the issued permit. This public notice will appear in the Smith County News & Messenger on January 29, 1997. A copy of the notice is enclosed for your information as is a copy of the modified draft permit.

As stated in the public notice a public hearing has been tentatively scheduled for March 11, 1997. However, this hearing will be held only if there is a significant degree of interest expressed in the permit modification and this office receives written requests for a public hearing by February 28, 1997. EPA reserves the right to cancel this hearing if there is little or no public interest expressed. We will notify you as to whether a hearing will be held.

Printed on Recycled Paper



Please contact Steve Platt of my staff at (215) 566-5464 if you have any questions on these materials or the permitting process in general.

Sincerely,

Carol Amend
for Alvin R. Morris, Director
Water Protection Division

Enclosures

cc: Mr. Byron T. Fulmer, Dept. of Mines, Minerals
and Energy, Abingdon, VA 24212

Mr. Charles Gates, Virginia Dept. of Environmental
Quality, Abingdon, VA 24212



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III

841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

JAN 28 1997

Mr. Frank Merendino
Vice President
Virginia Gas Pipeline Company
Post Office Box 2407
Abingdon, Virginia 24212

RE: Underground Injection Control (UIC) Permit Modification and Transfer of Ownership -
VAS1X932BSMY

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CONCURRENCES						
SYMBOL	3WP32	3WP32	3WP30			
SIGNATURE	Platt SP	Johnson	Amend			
DATE	1/27/97	1/27/97	1/27/97			

EPA Form 1330-1A (1/83) Printed on Recycled Paper OFFICIAL FILE COPY Printed on Recycled Paper

Please contact Steve Platt of my staff at (215) 566-5464 if you have any questions on these materials or the permitting process in general.

Sincerely,

Alvin R. Morris, Director
Water Protection Division

Enclosures

cc: Mr. Byron T. Fulmer, Dept. of Mines, Minerals
and Energy, Abingdon, VA 24212

Mr. Charles Gates, Virginia Dept. of Environmental
Quality, Abingdon, VA 24212



United States Environmental Protection Agency
Washington, DC 20460

Application To Transfer Permit

Name and Address of Existing Permittee

Virginia Gas Company
P.O. Box 2407
Abingdon, VA 24212

Name and Address of Surface Owner

Saltrville Industrial Development Authority
P.O. Drawer L
Saltrville, VA 24370

Locate Well and Outline Unit on
Section Plat- 640 Acres

N			
W			E
S			

State

Virginia

County

Washington / Smyth

Permit Number

VASIX932BSmy

Surface Location Description - See attached map

1/4 of 1/4 of 1/4 of 1/4 of Section Township N1A Range

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface

Location ft. from (N/S) Line of quarter section
and ft. from (E/W) Line of quarter section.

Well Activity

- ☒ Class I
☐ Class II
☐ Brine Disposal
☐ Enhanced Recovery
☐ Hydrocarbon Storage
☐ Class III
☐ Other

Well Status

- ☐ Operating
☐ Modification/Conversion
☐ Proposed

Type of Permit

- ☐ Individual
☒ Area
Number of Wells 3

Lease Number

Well Number

Name(s) and Address(es) of New Owners(s)

Virginia Gas Pipeline Company
P.O. Box 2407
Abingdon, VA 24212

Name and Address of New Operator

Same as "new owner"

Attach to this application a written agreement between the existing and new permittee containing a specific date for transfer of permit responsibility, coverage, and liability between them.

The new permittee must show evidence of financial responsibility by the submission of a surety bond, or other adequate assurance, such as financial statements or other materials acceptable to the Director.

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title (Please type or print)

Lydia Sinemus
Vice President

Signature

Lydia Sinemus

Date Signed

1/7/97

Transfer of Ownership

Agreement Form

Subject: Modification of Area EPA permit for three Class 1X injection wells (#VAS1X932BSMY)

To: U.S. Environmental Protection Agency
SDWA Branch (3WP32)
841 Chestnut Building
Philadelphia, PA 19107-4431

Current
Permittee: Virginia Gas Company

New
Permittee: Virginia Gas Pipeline Company

Virginia Gas Company agrees to relinquish the above mentioned permit to Virginia Gas Pipeline Company. The surety bond, originally in Virginia Gas Company's name, has been transferred to Virginia Gas Pipeline Company.

Virginia Gas Pipeline Company agrees to accept all liabilities, conditions and responsibilities as set forth in the permit.

Signed: M. C. [Signature]
President-
Virginia Gas Company

Date: 1/6/97

Signed: M. C. [Signature]
President-
Virginia Gas Pipeline Company

Date: 1/6/97

UNITED STATES
VALLEY AUTHORITY
AND SURVEYS DIVISION

CLASS 1-X SITES

VIRGINIA
GLADE SPRING QUADRANGLE
7.5 MINUTE SERIES (TOPOGRAPHIC)

4657 IV NE
(Saltville 212-NE)

428

429

47°30"

430

1,040,000 FEET

431

NORTH HOLSTON 4 MI.

432

81°45'

36°52'30"

4081

210,000
FEET

4079

7 MI.

CHILHOWIE

4077

50'



FACSIMILE

CRESTAR

To: John Jesse

Company: Virginia Gas Pipeline Company

From: Bonnie Sharp, Crestar Bank
(804)782-5488

Date: January 2, 1996

Number of pages: 2 (including cover page)

Comments:

Per our conversation earlier this week, I would like to confirm that the change you requested on the Standby Trust Account with Crestar Bank has been completed. The account is now under the name of Virginia Gas Pipeline Company. I have attached a copy of a generic system printout which shows the change taking place. I hope this will help you to document that the process has been completed. Thank you for your continued patience.

RECT ACCOUNT - 180052201

ACCOUNT NUMBER: 180052201

ACCOUNT NAME: VA GAS PIPELINE CO. STANDBY TRUST

CONTROL ID: 907

ADMINISTRATIVE SECTION

ACCOUNT LONG NAME: VIRGINIA GAS PIPELINE COMPANY
: STANDBY TRUST
:
:
:

ACCOUNT 180052201 MODIFIED, RFM TRANSACTION #35

F1-HELP F2-HINT F3-CANCEL F13-HELP F14-HINT F15-CANCEL



P.O. Box 2407 • Abingdon, VA 24212 • 540-676-2380 • Fax 540-676-0151

January 2, 1997

Mr. Stephen Platt
SDWA Branch (3WP32)
Office of Compliance and Enforcement
U.S. Environmental Protection Agency
841 Chestnut Street
Philadelphia, PA 19107-4431

Dear Mr. Platt:

Please find attached, formation breakdown data gathered on the proposed new zones in the EH-131 injection well. Please note that upon further examination of the data, the ISIP for both zones changed slightly.

If you need any additional information, please feel free to contact me at 540-676-2380.

Thank you for your attention to this matter.

Sincerely,


Lydia Sinemus

Attachment

EH - 131 PRICE FORMATION BREAKDOWN DATA

12/19/96

AWM

First Price Interval

On 12/10/96, the Price Formation was perforated from:

5846' - 5848'	6 Spf	12 Holes
5863' - 5866'	6 Spf	18 Holes
5880' - 5884'	6 Spf	<u>24 Holes</u>
		54 Holes Total

12 bbl. of 28% HCl acid was spotted across the perforations and a bridge plug was set at 5970'.

On 12/11/96, pumping was initiated at 07:42 a.m. at 0.5 bpm to breakdown the perms. Maximum pressure during breakdown was 3959 psi. During breakdown, a hydraulic hose ruptured on the pump truck and pumping was halted for about 25 minutes while repairs were made. When pumping resumed at 08:08 a.m. at 1 bpm, pressure climbed to 3864 psi but began to decline as the acid was displaced. Pump rate was steadily increased to about 4 bpm and the acid was overdisplaced with 24 bbl of 10.0 lb./gal. brine. Final pumping pressure was 2595 psi. Pumping was halted at 08:23 a.m. and an ISIP of 2280 psi was recorded. 15 minute SIP = 1588 psi; 30 minute SIP = 1530 psi; 45 minute SIP = 1508 psi; 60 minute SIP = 1492 psi. Pressures were checked with a Deadweight Gauge with the DWG reading to be consistently within the range of 8 - 15 psi higher.

Second Price Interval

The bridge plug was left in the well at 5970' and the second Price interval was perforated at:

5610' - 5612'	6 Spf	12 Holes
5616' - 5620'	6 Spf	24 Holes
5626' - 5628'	6 Spf	12 Holes
5636' - 5642'	6 Spf	36 Holes
5652' - 5656'	6 Spf	<u>24 Holes</u>
		108 Holes Total

12 bbl. of 28% HCl acid was again, spotted across the perforations and a second bridge plug was set at 5750'.

On 12/12/96 the lines were tested at 08:13 a.m. A different recording unit had been brought in and some initial problems were experienced in setting up the recording data. After correcting these problems, pumping was begun at 08:51 a.m. Maximum recorded pressure during breakdown was 2369 psi. The acid was overdisplaced with 24 bbl of 10.0 lb./gal. brine with pumping rates increasing from 0.5 bpm to 3.9 bpm. Final recorded pumping pressure was 2240 psi. Pumping was halted at 09:06 a.m. and an ISIP of 2100 psi was recorded. Pressure

continued to decline rapidly and the Deadweight Gauge was hooked up to check pressures. After 25 minutes, the recorded pressure was reading 1178 psi while the DWG reading was still at 1850 psi. The pump truck operator also stated that his pressure gauges on the pumping unit were reading about 2500 to 2700 psi or about 300 - 400 psi higher during breakdown and displacement. It was decided to repressure the formation and record the data manually with the Deadweight Gauge. An additional 10 bbl. of brine was pumped at 09:53 a.m. and a maximum pressure of 2581 psi was recorded. An ISIP of 2463 psi was also recorded. Deadweight pressures were taken and compared with Halliburton's pressure. This data is as follows:

<u>Time</u>	<u>Halliburton</u>	<u>Deadweight</u>	<u>Time</u>	<u>Halliburton</u>	<u>Deadweight</u>
5 min. (SIP)	2181 psi	2263 psi	35 min.	1672 psi	1733 psi
10 min.	2047 psi	2138 psi	40 min.	1607 psi	1678 psi
15 min.	1956 psi	2034 psi	45 min.	1537 psi	1629 psi
20 min.	1885 psi	1937 psi	50 min.	1346 psi	1584 psi
25 min.	1810 psi	1857 psi	55 min.	1180 psi	1542 psi
30 min.	1734 psi	1793 psi	60 min.	1103 psi	1501 psi

Comparing the pressure data during the first 45 minutes shows the DWG pressure to be consistently 47 - 92 psi higher. Because of rapidly declining pressure during shutdown, an accurate ISIP is not possible with the Deadweight Gauge. However, most likely the true ISIP is probably at least 47 psi higher than recorded data, and an ISIP of 2510 psi should be assumed. The last three Halliburton readings again begin to show a rapid pressure decline with the difference at 60 min. SIP between the Halliburton recorded pressure and the Deadweight pressure to be 398 psi. A postjob analysis of the pressure recording equipment that evening conducted by Halliburton revealed a damaged cable that had allowed moisture from the steady rain that day to affect their data gathering.

Data Summary:

First Interval

Perfs: 5,846' - 5884'
 54 Perforations
 Breakdown Pressure: 3959 psi
 ISIP: 2280 psi
 60 Minute SIP: 1492 psi
 Injection Fluid: 10 ppg. brine
 Frac Gradient: .908 psi/ft.

Second Interval

Perfs: 5,610' - 5,656'
 108 Perforations
 Breakdown Pressure: 2669 psi
 ISIP: 2510 psi
 60 Minute SIP: 1501 psi
 Injection Fluid: 10 ppg. brine
 Frac Gradient: .965 psi/ft.

Virginia Gas Company

P.O. Box 2407 • Abingdon, VA 24212 • 540-676-2380 • Fax 540-676-0151

VIA FAX & Mail
215-566-2302

December 13, 1996

Mr. S. Stephen Platt
SDWA Branch (3WP32)
Office of Compliance and Enforcement
United States Environmental Protection Agency
841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

RE: EH - 131 Disposal well, UIC Permit #VAS1X932BSMY

Dear Mr. Platt:

On Tuesday, December 10, 1996, testing of the Price Formation between 5,000' - 6,000' was initiated. VGC has broken down the two lower most zones. These are the first and second intervals as stated in Al Mueller's letter dated December 3, 1996. Currently VGC is planning on using these two intervals in the Price formation. The uppermost interval is not to be completed unless conditions dictate it is needed later on. The following is the breakdown data for each interval:

First Interval

Zone: 5,846' - 5,884'
Perforations: 54
Breakdown Pressure: 3959 psig
ISIP = 2144 psig
60 minute SIP = 1492 psig
Injection Fluid = 10 ppg brine
Frac gradient = .886 psig/ft

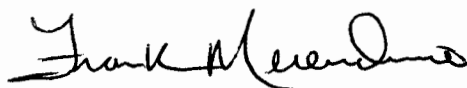
Second Interval

Zone: 5,610' - 5,656'
Perforations: 108
Breakdown Pressure: 2669 psig
ISIP = 2463 psig
60 minute SIP = 1501 psig
Injection Fluid = 10 ppg brine
Frac gradient = .957 psig/ft

This data looks favorable for injection and warrants VGC to request a modification to the UIC permit. Therefore VGC is formally requesting from the EPA, the maximum injection pressure and maximum volumes allowed for these two intervals. VGC wishes to isolate the shale zones to only utilize the Price Formation.

Also VGC is asking for permission to stimulate these two intervals prior to injection.

Sincerely,



Frank Merendino
Virginia Gas Company



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III

841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

DEC 05 1996

Mr. Al W. Mueller
Virginia Gas Company
P.O. Box 2407
Abingdon, VA 24212

Dear Mr. Mueller:

Your letter of December 3, 1996, submitted to support your request to conduct an injectivity test in the Price Formation, has been reviewed by EPA Region III Underground Injection Control program staff. You are hereby granted permission to conduct this test, utilizing the EH-131 well permitted under UIC permit VAS1X932BSMY, located in Smyth County, Virginia, under the following conditions.

1. Injection Zone - Injection shall occur into the Price Formation through three perforated intervals as follows: between 5846 feet to 5884 feet, between 5610 feet to 5656 feet and between 5162 feet to 5534 feet. Each interval shall be tested separately and a retrievable bridge plug shall be installed below each interval being tested.
2. Test Duration - The injectivity test shall be limited to a maximum of 30 consecutive days.
3. Total Volume Limitation - During the testing period, the total volume of fluid to be injected shall not exceed a maximum of 5000 barrels of brine. In addition, no more than 1000 barrels may be injected during any given 24 hour period.
4. Maximum Injection Pressure - The maximum injection pressure shall be established such that it will not exceed the formation breakdown pressure at each interval tested. Once breakdown is established, the well will be shut-in, an instantaneous shut-in (ISIP) established and the pressure decline monitored for a least one hour.

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5. Injection Fluid - Injection fluid shall consist solely of brine produced from the gas storage caverns Virginia Gas operates. The specific gravity of the fluid shall be determined so that a hydrostatic pressure of the fluid column in the well during injection can be established.


6. Monitoring - Injection volumes and pressures shall be monitored and recorded on a continuous basis.

A final report must be submitted to EPA within 30 days of the conclusion of the test.

Should results of the testing be encouraging, fracture stimulation of one or more of the intervals tested may be considered. Stimulation of the well would be required prior to EPA granting authorization to inject. In addition, based on the results of this testing, it is likely that a modification of this permit will be required so that an accurate maximum injection pressure can be established prior to injection being authorized. A revision of the maximum injection pressure condition of your permit will also require EPA to go through the public participation requirements required by regulation.

If you should have any questions, please give me a call at 215-566-5464.

Sincerely,



S. Stephen Platt
SDWA Branch (3WP32)
Office of Compliance and
Enforcement

Virginia Gas Company

P.O. Box 2407 • Abingdon, VA 24212 • 540-676-2380 • Fax 540-676-0151

December 3, 1996

Mr. Steve Platt
SDWA Branch (3WP32)
Office of Compliance and Enforcement
841 Chestnut Street
Philadelphia, PA 19107

RE: EH - 131 Step Rate Test on Price Formation between 5000' and 6000'
EPA Permit Number VAS1X932BSMY

Dear Mr. Platt:

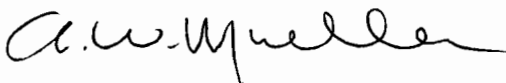
Virginia Gas Company plans to begin conducting step-rate injection tests in the EH - 131 well during the week of December 9, 1996 on the Price Formation from 5000' to 6000'. A preliminary mechanical integrity test was conducted on the casing from surface to 6000' on 11/7/96 and no leaks were observed after holding pressure for 1 hour at 2,050 psi.

Each test will be conducted in five stages by pumping brine fluid at 20 gal./min., 40 gal./min., 60 gal./min., 80 gal./min., and 100 gal./min. Rate will remain constant during each stage with each stage lasting the duration of 1 hour. Pressure will be monitored and recorded by a continuous recording device and checked at regular intervals with a deadweight gauge. Total fluid pumped will be approximately 18,000 gal. or 429 bbls. for each test. At the conclusion of each test, the pressure decline will be monitored for 1 hour and an ISIP recorded to determine a closure pressure. Since the intent of the tests is to accurately determine the formation fracturing pressure, the maximum permitted pressure of 1590 psi may be exceeded during the final stage or stages of the test. This pressure will only be exceeded during the testing phase. If the Price Formation shows potential as an injection zone, a permit modification will be requested to include the Price with the existing permit.

Once these tests are complete, the results will be forwarded to your office for review. At that time, we will be able to schedule a final M.I.T. with tubing and packer set at 5000', and we will notify your office and the Virginia Division of Gas and Oil so representatives may be present to witness the test.

Please feel free to call me at (540) 676-2380 if you have any questions.

Sincerely,



A. W. Mueller
Virginia Gas Company

EH - 131 Testing Procedure - Price Formation

12/2/96 AWM

FIRST INTERVAL - PRICE

- 1) RU Schlumberger; pull Retrievable Bridge Plug (RBP) @ 7770'
- 2) Perforate Price Formation at:

5846' - 5848'	6 spf	2'	12 H
5863' - 5866'	6 spf	3'	18 H
5880' - 5884'	6 spf	4'	24 H
- 3) Circulate 500 gal. 28% HCL acid across perfs; RIH and set RBP @ 5970';
- 4) Displace acid and breakdown formation; overdisplace acid w/ 24 bbl. brine.
- 5) RU Halliburton to do Step-Rate Test w/ pump truck, pressure recorder, and DWG; Pump:

a)	20 gpm	0.48 bpm	691 bpd	60 min.
b)	40 gpm	0.95 bpm	1,368 bpd	60 min.
c)	60 gpm	1.43 bpm	2,059 bpd	60 min
d)	80 gpm	1.90 bpm	2,736 bpd	60 min
e)	100 gpm	2.38 bpm	3,428 bpd	60 min

- Record DWG readings every 10 minutes
- Set Maximum Pressure Limit @ 2000 psi
- Shut down; record ISIP; monitor pressure decline for 1 hour; record DWG readings every 5 minutes

SECOND INTERVAL - PRICE

- 1) RU Schlumberger w/ lubricator; pull RBP at 5970'
- 2) Perforate Price Formation at:

5610' - 5612'	6 spf	2'	12 H
5616' - 5620'	6 spf	4'	24 H
5626' - 5628'	6 spf	2'	12 H
5636' - 5642'	6 spf	6'	36 H
5652' - 5656'	6 spf	4'	24 H

- 3) Circulate 500 gal. 28% HCL acid across perfs; RIH and set RBP @ 5750';
- 4) Displace acid and breakdown formation; overdisplace acid w/ 24 bbl. brine.
- 5) Repeat Step-Rate Test w/ pump truck, pressure recorder, and DWG; Pump:

a)	20 gpm	0.48 bpm	691 bpd	60 min.
b)	40 gpm	0.95 bpm	1,368 bpd	60 min.
c)	60 gpm	1.43 bpm	2,059 bpd	60 min
d)	80 gpm	1.90 bpm	2,736 bpd	60 min
e)	100 gpm	2.38 bpm	3,428 bpd	60 min

- Record DWG readings every 10 minutes
- Set Maximum Pressure Limit @ 2000 psi
- Shut down; record ISIP; monitor pressure decline for 1 hour; record DWG readings every 5 minutes

THIRD INTERVAL - PRICE

- 1) RU Schlumberger w/ lubricator; pull RBP at 5750'
- 2) Perforate Price Formation at:

5162' - 5168'	6 spf	6'	36 H
5192' - 5196'	6 spf	4'	24 H
5204' - 5206'	6 spf	4'	24 H
5520' - 5524'	6 spf	4'	24 H
5530' - 5534'	6 spf	4'	24 H

- 3) Circulate 500 gal. 28% HCL acid across perfs; RIH and set RBP @ 5550'
- 4) Displace acid and breakdown formation; overdisplace acid w/ 24 bbl. brine.
- 5) Repeat Step-Rate Test w/ pump truck, pressure recorder, and DWG; Pump:

a)	20 gpm	0.48 bpm	691 bpd	60 min.
b)	40 gpm	0.95 bpm	1,368 bpd	60 min.
c)	60 gpm	1.43 bpm	2,059 bpd	60 min
d)	80 gpm	1.90 bpm	2,736 bpd	60 min
e)	100 gpm	2.38 bpm	3,428 bpd	60 min

- Record DWG readings every 10 minutes
- Set Maximum Pressure Limit @ 2000 psi
- Shut down; record ISIP; monitor pressure decline for 1 hour; record DWG readings every 5 minutes

- 6) RU Schlumberger w/ lubricator; pull RBP at 5550'; evaluate data to determine if additional testing is required.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III

841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

NOV 05 1996

(b) (6)(b) (6)(b) (6)

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Dear Mr. (b) (6)

Thank you for your letter to the Environmental Protection Agency (EPA) regarding Virginia Gas Company's development of their gas storage and brine disposal facility. We understand that you have concerns that this development may be too close to your water well and contaminate your drinking water.

Virginia Gas Company has been involved for some time now in the development of their gas storage facility. Virginia Gas will be utilizing previously leached storage caverns under their property to store natural gas. During the storage of the natural gas, brine (salt water), which is present in the storage caverns, is displaced from the caverns and is temporarily stored on the surface in two salt brine ponds. These ponds have been permitted by the Virginia Department of Environmental Quality (VADEQ) and are therefore under their jurisdiction.

The gas well you referred to in your letter is no longer a gas well. This well has been drilled deeper and converted into a brine disposal well. A Underground Injection Control (UIC) permit was issued to Virginia Gas by the United States Environmental Protection Agency (EPA) on April 29, 1996, for the construction and operation of this brine disposal well. Construction of this well was recently completed. In the upcoming weeks, EPA will be testing this well for mechanical integrity to ensure that the well does not leak and does not pose a threat to underground sources of drinking water (USDWs). The intent of the UIC Program is to ensure that all injection wells are constructed and operated properly to protect all USDWs. If this well passes the mechanical integrity testing, EPA will then authorize the injection of brine into the well for disposal. At this time, Virginia Gas would be permitted to inject the brine from the two surface ponds into the injection well.

Virginia Gas was also issued a permit to construct and operate another type of injection well, solution mining well(s), for the purpose of leaching additional gas storage caverns. Although the construction and operation of these wells has yet to begin, it is Virginia Gas' intent to conduct this activity in the future. If Virginia Gas does develop additional gas storage caverns, the brine generated from the leaching process will also be disposed of through the brine injection well. I have enclosed for you information both copies of the permits EPA issued to Virginia Gas.

OCTOBER 30, 1996

VIRGINIA GAS COMPANY
PO BOX 2407
ABINGDON, VA 24210

RE: (b) (6)(b) (6)(b) (6)(b) (6) PROPERTY

TO WHOM IT MAY CONCERN:

I WISH TO FILE A COMPLAINT AGAINST VIRGINIA GAS COMPANY AND
WHOMEVER IS RESPONSIBLE FOR THE TWO SALT BRINE PONDS ABOVE MY
HOUSE. THE PONDS AND GAS WELLS ARE TOO CLOSE TO MY WATER WELL AND
I AM AFRAID THEY WILL CONTAMINATE THE WATER.

THE DOCUMENTS I RECEIVED FROM VIRGINIA GAS COMPANY STATED THAT
THERE WERE NO WELLS IN THE VICINITY. I CALLED THE ENVIRONMENTAL
PROTECTION AGENCY AND THE CONTACTED AN ABINGDON REPRESENTATIVE.

YOUR IMMEDIATE RESPONSE WILL BE APPRECIATED.

SINCERELY,

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P.O. Box 2407 • Abingdon, VA 24212 • 540-676-2380 • Fax 540-676-0151

October 29, 1996

Mr. Steve Platt
SDWA Branch (3WP32)
Office of Compliance and Enforcement
841 Chestnut Street
Philadelphia, PA 19107

RE: EH - 131 Step Rate Test and Casing M.I.T.

Dear Mr. Platt:

Virginia Gas Company plans to initiate step-rate tests in the EH - 131 well during the week of November 4, 1996. The step-rate tests will be conducted in those formations permitted by VAS1X932BSMY from 6000' to TD. Prior to any testing, a preliminary casing integrity test will be conducted by setting a retrievable bridge plug at 6000' and pressuring up the casing to a minimum pressure of 1750 psi for 1 hour. If no leaks are detected, the pressure will be bled off and the bridge plug retrieved.

A series of step-rate tests will then be conducted beginning with the lowermost permitted formation. Each test will be conducted in five stages by pumping brine fluid at 20 gal./min., 40 gal./min., 60 gal./min., 80 gal./min., and 100 gal./min. Rate will remain constant during each stage with each stage lasting the duration of 1 hour. Pressure will be monitored and recorded by a continuous recording device and checked at regular intervals with a deadweight gauge. Total fluid pumped will be approximately 18,000 gal. or 429 bbls. At the conclusion of the test, the pressure decline will be monitored for 1 hour and an ISIP recorded to determine a closure pressure. Since the intent of the tests is to accurately determine the formation fracturing pressure, the maximum permitted pressure of 1590 psi may be exceeded during the final stage or stages of the test. This pressure will only be exceeded during the testing phase. Normal injection operations will maintain the maximum injection pressure below 1590 psi unless a permit modification is approved.


After completion of the step-rate test on the lowermost zone, a bridge plug will be set above the perforations and the procedure will be repeated on the next interval. This process will then be repeated until all potential injection zones below 6000' have been tested. Once these tests are complete, the results will be forwarded to your office for review. At that time, we will be able to schedule a final M.I.T. with tubing and packer set at 6000', and we will notify your office and the Virginia Division of Gas and Oil so representatives may be present to witness the test.

A tentative completion schedule is as follows:

11/4/96	Run CBL/GR on 4 1/2"; set bridge plug, test casing to 6000'
11/5/96	Begin injection tests on individual formations below 6000'
11/25/96	Run 2 7/8" tubing w/ packer to 6000'
11/26/96	Final M.I.T.

Please feel free to call me at (540) 676-2380 if you have any questions.

Sincerely,



Al Mueller

CC: Virginia Division of Gas and Oil

Virginia
Gas
Company

P.O. Box 2407 • Abingdon, VA 24212 • 540-676-2380 • Fax 540-676-0151

May 20, 1996

Mr. Alvin R. Morris, Director
Water Protection Division
Safe Drinking Water Act Branch (3WP32)
U.S. Environmental Protection Agency, Region III
841 Chestnut Building
Philadelphia, PA 19107

Dear Mr. Morris:

Virginia Gas Company is in receipt of the EPA Underground Injection Control permits to operate three Class IIIG solution mining wells (VAS3G931BSMY) and three Class 1X industrial brine disposal wells (VAS1X932BSMY). I have read both permits and am personally familiar with all terms and conditions of these documents.

Thank you for your time and attention to this project.

Sincerely,



Frank Merendino
Vice-President



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III

841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

APR 29 1996

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Frank Merendino
Vice President
Virginia Gas Company
Post Office Box 2407
Abingdon, Virginia 24210

RE: Final UIC Permits, VAS3G931BSMY and VAS1X932BSMY

Dear Mr. Merendino:

Enclosed are the executed final Underground Injection Control (UIC) program permits to operate three Class IIIG solution mining injection wells and three Class 1X industrial brine disposal injection wells, located at the Saltville Storage Project, Smyth and Washington Counties, Virginia.

The final permits are exactly the same as the draft final versions which were transmitted to you for review on February 15, 1996. The provisions of your permits may not be appealed since no comments were made on the draft.

The permits effective dates are specified on the signatory page. All permit conditions are effective and enforceable as of that date and your compliance with these conditions is required. These permits will remain in effect for ten years.

You should respond to the provisions of Condition D.9.b. of Part I of the permits and provide an appropriate demonstration of the delegation of signatory authority.

In addition, please note that permit Condition D.1. of Part II of the permits require that you report back to the Environmental Protection Agency within thirty days of the receipt of this letter and attest to the fact that you have read and are personally familiar with all terms and conditions of the permits.



Please direct any questions you may have on the permits, their conditions or other UIC procedures to Mr. Steve Platt of my staff at (215) 597-2537.

Sincerely,

for Robert G. Morris Deputy
Alvin R. Morris, Director
Water Protection Division

Enclosures



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III

841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

MAJOR MODIFICATION
UNDERGROUND INJECTION CONTROL PERMIT NUMBER VAS1X932BSMY
AUTHORIZATION TO OPERATE THREE (3) 1X INJECTION WELLS

In compliance with provisions of the Safe Drinking Water Act, as amended, (42 U.S.C. §§ 300f-300j-11, commonly known as the SDWA), the Resource Conservation and Recovery Act (42 U.S.C. §§ 6901-6991i, commonly known as RCRA) and attendant regulations promulgated by the U. S. Environmental Protection Agency under Title 40 of the Code of Federal Regulations,

Virginia Gas Pipeline Company

Post Office Box 2407

Abingdon, Virginia 24212

is authorized by this permit to inject fluids through three Class 1X injection wells from a facility located at the Saltville Storage Project in Saltville, Virginia into the Devonian Shale, Huntersville, Oriskany, Clinton and Clinch Formations injection interval in accordance with the conditions set forth herein.

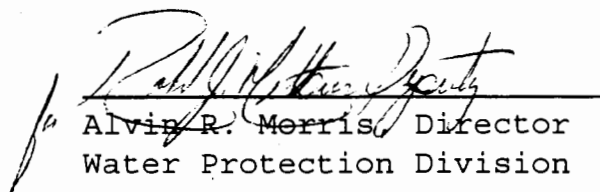
All references to Title 40 of the Code of Federal Regulations are to all regulations that are in effect on the date that this permit is effective.

This permit became effective on April 29, 1996.

This permit modification shall become effective on
March 24, 1997.

This permit and its authorization to inject shall remain in effect until midnight April 29, 2006.

Signed this 24th day of March, 1997.


Alvin R. Morris, Director
Water Protection Division





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III

841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

UNDERGROUND INJECTION CONTROL PERMIT NUMBER VAS1X932BSMY
AUTHORIZATION TO OPERATE THREE (3) 1X INJECTION WELLS

In compliance with provisions of the Safe Drinking Water Act, as amended, (42 U.S.C. §§ 300f-300j-11, commonly known as the SDWA), the Resource Conservation and Recovery Act (42 U.S.C. §§ 6901-6991i, commonly known as RCRA) and attendant regulations promulgated by the U. S. Environmental Protection Agency under Title 40 of the Code of Federal Regulations,

Virginia Gas Company

Post Office Box 2407

Abingdon, Virginia 24210

is authorized by this permit to inject fluids through three Class 1X injection wells from a facility located at the Saltville Storage Project in Saltville, Virginia into the Devonian Shale, Huntersville, Oriskany, Clinton and Clinch Formations injection interval in accordance with the conditions set forth herein.

All references to Title 40 of the Code of Federal Regulations are to all regulations that are in effect on the date that this permit is effective.

This permit shall become effective on April 29, 1996.

This permit and its authorization to inject shall remain in effect until midnight April 29, 2006.

Signed this 29th day of April, 1996.


Alvin R. Morris, Director
Water Protection Division



PART I

A. Effect of Permit

The permittee is allowed to engage in underground injection in accordance with the conditions of this permit. The underground injection activity, otherwise authorized by this permit, shall not allow the movement of fluid containing any contaminant into underground sources of drinking water, if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR Part 141 or may otherwise adversely affect the health of persons. Any underground injection activity not authorized in this permit or otherwise authorized by rule is prohibited. Issuance of this permit does not convey property rights or mineral rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of State or local law or regulations. Compliance with terms of this permit does not constitute a defense to any action brought under Part C and the imminent and substantial endangerment provisions in Part D of the Safe Drinking Water Act (SDWA) or any other common or statutory law for any breach of any other applicable legal duty.

B. Permit Actions

This permit can be modified, revoked and reissued or terminated for cause as specified in 40 CFR §§ 144.12, 144.39 and 144.40 . Also, the permit is subject to minor modifications as specified in 40 CFR § 144.41. The filing of a request for a permit modification, revocation and reissuance, or termination, or the notification of planned changes, or anticipated noncompliance on the part of the permittee shall not stay the applicability or enforceability of any permit condition.

C. Severability

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

D. General Requirements

1. Duty to Comply. The permittee shall comply with all applicable UIC Program regulations and conditions of this permit. Any permit noncompliance constitutes a violation of the SDWA and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or for denial of a permit renewal application.

2. Need to Halt or Reduce Activity Not a Defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3. Duty to Mitigate. The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

4. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control and related appurtenances which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this permit.

5. Duty to Provide Information. The permittee shall furnish the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit. If the permittee becomes aware of any incomplete or incorrect information in the permit application or subsequent reports, the permittee shall promptly submit information addressing these deficiencies.

6. Inspection and Entry. The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:

a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d. Sample or monitor any substances or parameters at any location, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by SDWA.

7. Penalties. Any person who violates a permit requirement is subject to civil penalties, fines and other enforcement actions under the SDWA and may be subject to the same such actions pursuant to RCRA. Any person who willfully violates permit conditions is subject to criminal prosecution.

8. Transfer of Permits. This permit is not transferable to any person except after notice is sent on EPA Form 7520-7 and approval is given by the Director and the requirements of 40 CFR § 144.38 are satisfied. The Director may require modification or revocation of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Safe Drinking Water Act.

9. Signatory Requirements.

a. All reports required by this permit and other information requested by the Director shall be signed as follows:

- (1) for a corporation, by a responsible corporate officer of at least the level of vice-president;

- (2) for a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
- (3) for a Municipality, State, Federal, or other public agency by either a principal executive or a ranking elected official.

b. A duly authorized representative of the official designated in paragraph a. above may also sign only if:

- (1) the authorization is made in writing by a person described in paragraph a. above;
- (2) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or a position of equivalent responsibility. A duly authorized representative may thus be either a named individual or any individual occupying a named position; and
- (3) the written authorization is submitted to the Director.

c. If an authorization under paragraph b. of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph b. of this section must be submitted to the Director prior to or together with any reports, information or applications to be signed by an authorized representative.

d. Any person signing a document under paragraph a. or b. of this section shall make the following certification:

"I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all

attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

10. Confidentiality of Information.

a. In accordance with 40 CFR Parts 2 (Public Information) and § 144.5, any information submitted to the Director pursuant to these permits may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice. If a claim is asserted, the information will be treated in accordance with the procedures in 40 CFR Part 2 and § 144.5 (Public Information).

b. Claims of confidentiality for the following information will be denied:

- (1) The name and address of any permit applicant or permittee.
- (2) Information which deals with the existence, absence, or level of contaminants in drinking water.

11. Reapplication. If the permittee wishes to continue operations regulated by this permit, after the expiration date of this permit, the permittee must submit a letter notifying EPA of their intent to continue operations at least 120 days before this permit expires.

12. State Laws. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation.

PART II

A. General

Copies of all reports and notifications required by this permit shall be signed and certified in accordance with the requirements of Section D(9) of Part I of this permit and shall be submitted to the Director at the following address:

Water Protection Division
Safe Drinking Water Act Branch (3WP32)
U. S. Environmental Protection Agency
Region III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

B. Record Retention

1. The permittee shall retain records of all monitoring and other information required by this permit, including the following (if applicable), for a period of at least five years from the date the application was signed. This period may be extended by request of the Director at any time.

a. All data required to complete the permit application form for this permit and any supplemental information submitted under 40 CFR § 144.31.

b. Calibrations and maintenance records and all original strip chart recordings for continuous monitoring instrumentation.

c. Copies of all reports required by this permit.

d. The nature and composition of all injected fluids until three years after the completion of any plugging and abandonment procedures specified by this permit and 40 CFR § 146.10.

2. The permittee shall continue to retain the records after the above specified retention periods unless he or she delivers the

records to the Director or obtains written approval from the Director to discard the records.

3. Records of monitoring information shall include:

- a. The date, exact place, and the time of sampling or measurements;
- b. The individual(s) who performed the sampling or measurements;
- c. A precise description of both sampling methodology and the handling (custody) of samples;
- d. The date(s) analyses were performed;
- e. The individual(s) who performed the analyses;
- f. The analytical techniques or methods used; and
- g. The results of such analyses.

4. Monitoring of the nature of injected fluids shall comply with applicable analytical methods cited below.

5. All environmental measurements required by the permit, including, but not limited to measurements of pressure, temperature, mechanical integrity (as applicable) and chemical analyses shall be done in accordance with EPA guidance on quality assurance.

C. Monitoring Requirements

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the fluid to be analyzed and the procedure for analysis of the sample shall be in accordance with test procedures approved under 40 CFR § 136.3 unless otherwise approved by the Director. The permittee shall identify the types of tests and methods used to generate the monitoring data.

2. Continuous recording devices shall be used to monitor injection pressure, flow rate, cumulative volume and the annular pressure between the tubing and the long string casing.

3. The nature of the injected fluid shall be analyzed for the parameters listed below at the initiation of the injection operation. Thereafter, the injection fluid shall be analyzed every two years.

-pH	-Manganese
-Specific Gravity	-Total Dissolved Solids
-Specific Conductance	-Barium
-Sodium	-Hydrogen Sulfide
-Iron	-Dissolved Oxygen
-Magnesium	-TOC
-Chloride	

4. A demonstration of mechanical integrity in accordance with 40 CFR § 146.8 shall be made at least once every five years on each well. Subsequent demonstrations shall be conducted no more than 30 days prior to the anniversary date of the initial demonstration. In addition to the above requirement, a mechanical integrity test demonstration shall be conducted whenever protective casing or tubing is removed from a well, the packer is resealed, or a well failure is evident. The permittee may continue operation only if he or she has successfully demonstrated to the Director the mechanical integrity of the permitted wells. The permittee shall cease injection operations if a loss of mechanical integrity becomes evident or if mechanical integrity cannot be demonstrated. Any such test shall be conducted in keeping with the notification requirements of Permit Condition D.12. of Part II of this permit. Results of this test shall be submitted with the first quarterly report after completion of the test.

5. Monitoring of the pressure buildup in the injection zone shall be performed annually. At a minimum, this will require the wells to be shut-in for a sufficient period of time to conduct a valid observation of the pressure fall-off curve. Results of this test shall be submitted with the first quarterly report after completion of the test.

D. Reporting and Notification Requirements.

1. Report on Permit Review. Within 30 days of receipt of this permit, the permittee shall report to the Director that he or she has read and is personally familiar with all terms and conditions of this permit.

2. Commencing Injection. The operator of a new injection well(s) may not commence injection until construction is complete, and

a. The permittee has demonstrated to EPA that the injection well(s) has/have mechanical integrity in accordance with 40 CFR § 146.8 and the permittee has received written notice from the Director that such demonstration is satisfactory;

b. The permittee has submitted notice of completion of construction (EPA Form 7520-10) to the Director; and

c. The Director has inspected or otherwise reviewed the new injection well(s) and finds it is in compliance with the conditions of the permit; or

d. The permittee has not received notice from the Director of his or her intent to inspect or otherwise review the new injection well(s) within 13 days of the date of the notice in paragraph (a) of this permit condition, in which case, prior inspection or review is waived and the permittee may commence injection.

3. Twenty-four Hour Reporting.

a. The permittee shall report to the Director any noncompliance which may endanger health or the environment. Any information shall be provided orally (phone number: (215) 566-5445) within 24 hours from the time the permittee becomes aware of the circumstances. The following shall be included as information which must be reported orally within 24 hours:

(1) Any monitoring or other information which indicates that any contaminant may cause an endangerment to an underground source of drinking water.

(2) Any noncompliance with a permit condition, or malfunction of the injection system which may cause fluid migration into or between underground sources of drinking water, or failure of mechanical integrity test demonstrations.

b. A written submission shall also be provided within five days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

4. Anticipated Noncompliance. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

5. Other Compliance. The permittee shall report all other instances of noncompliance not reported at the time monitoring reports are submitted. The reports shall contain the information listed in Permit Condition D.3., of Part II of this permit.

6. Planned Changes. The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility.

7. Conversion. The permittee shall notify the Director thirty days prior to the conversion of the well to an operating status other than an injection well.

8. Temporary Abandonment. The permittee shall notify the Director prior to the temporary abandonment of an injection well.

9. Quarterly Reports. The permittee shall submit quarterly reports (using EPA Form 7520-11) to the Director summarizing the results of the monitoring required by Permit Condition C of Part II of this permit. These reports shall include each well's monthly average, maximum, and minimum values for injection pressure, flow rate, cumulative volume, and annular pressure, the results of any mechanical integrity test(s), and the results of any fluid analysis. The quarterly reports shall be submitted not later than April 30, July 31, October 31, and January 31. Each report will provide the required information from the previous three month period.

10. Plugging and Abandonment Reports and Notifications.

a. The permittee shall notify the Director 45 days before the plugging and abandonment of the well. The Director may allow a shorter notice period upon written request.

b. Revisions to the Plugging and Abandonment Plan must be submitted to the Director no less than 45 days prior to plugging and abandonment. The Director must approve the revisions prior to the start of plugging operations.

c. Within 60 days after plugging the well, the permittee shall submit a report to the Director which shall consist of either:

(1) A statement that the well was plugged in accordance with the plan previously submitted to and approved by the Director; or

(2) Where actual plugging differed from the plan previously submitted, an updated version of the plan, on the form supplied by the Director, specifying the different procedures used. Any deviation from a previously approved plan, which may endanger Underground Sources of Drinking Water, is cause for the Director to require the operator to replug the well.

The report shall be certified as accurate by the person who performed the plugging operation.

11. Compliance Schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 30 days following each schedule date.

12. Mechanical Integrity Tests. The permittee shall notify the Director of his or her intent to conduct a mechanical integrity test at least 30 days prior to such a demonstration.

13. Cessation of Injection Activity. After a cessation of injection for two years the owner or operator shall plug and abandon the well in accordance with the Plugging and Abandonment Plan unless he or she:

a. Provides written notice to the Director; and

b. Describes actions or procedures, satisfactory to the Director, that the permittee will take to ensure that the well will not endanger USDWs during the period of temporary abandonment. These actions and procedures shall include compliance with the technical requirements applicable to an active injection well unless waived in writing by the Director.

E. Mechanical Integrity Standards

1. Standards. The permittee shall have and maintain the mechanical integrity of the permitted injection(s) well pursuant to 40 CFR § 146.8.

2. Request from Director. The Director may, by written notice, require the permittee to demonstrate mechanical integrity at any time.

PART III

A. Construction Requirements

1. Notwithstanding any other provision of this permit, the injection well(s) shall inject only into formations which are separated from any underground source of drinking water by a

confining zone that is free of known open faults or fractures within the Area of Review.

2. Casing and Cementing. The permittee shall case and cement each well to prevent the movement of fluids into or between underground sources of drinking water. The casing and cement used in the construction of each well shall be designed for the life expectancy of the well and, at a minimum, the operation shall be conducted in accordance with the construction details described in the permittee's permit application as well as any conditions highlighted below. However, in all cases cemented surface casing shall be installed from the surface to a depth at least fifty feet below the lowermost underground source of drinking water, each subsequent string of casing shall be cemented back to at least 50 feet above the base of the next longest casing string and the injection zone shall be isolated by the placement of a tubing and packer inside the long string casing.

3. Logs and Tests. At a minimum the following logs and/or tests shall be conducted during the drilling and construction of each injection well: For surface casing intended to protect underground sources of drinking water: gamma ray, resistivity, and caliper prior to the casing being installed and a cement bond/variable density or temperature log after the casing is set and cemented. For intermediate and long string casings: gamma ray, resistivity, porosity and caliper prior to the casing being installed and a cement bond/variable density or temperature log after the casing is set and cemented.

The permittee shall submit a narrative report that interprets log and test results which specifically relate to the results of the cementing operation. Further, the narrative shall detail the rationale used to make these interpretations. The narrative report shall be prepared by a knowledgeable log analyst and submitted to the Director. The Director may prescribe additional logs or waive logging requirements in the future should field conditions so warrant.

4. Mechanical Integrity. Injection operations are prohibited until the permittee demonstrates that the well covered by this permit has mechanical integrity in accordance with 40 CFR

§ 146.8 and the permittee has received notice from the Director that such a demonstration is satisfactory in accordance with the provisions of Condition D.2. of Part II of this permit.

5. Corrective Action. Injection operations are prohibited until the permittee has successfully performed the activities detailed in the Corrective Action Plan, specified in Attachment C of the permit application and hereby incorporated.

6. Completion Reports. The results of those activities required in Part III, Section A, 1 through 5 of this permit must be summarized and submitted to the Director prior to the commencement of injection operations as part of the Completion Reports.

B. Operating Requirements

1. Injection Formation. Injection shall be limited to the Price Formation in the subsurface interval between 5610 feet and 5884 feet.

2. Injection Fluid. The permittee shall not inject any hazardous substances, as defined by 40 CFR 261 nor any other fluid, other than the brine fluid generated from the Class III solution mining process.

3. Injection Volume Limitation. The facility's injection volume shall not exceed 1800 barrels per day. The monthly average for the facility shall not exceed 960 barrels per day (or a total of 28,800 barrels per month).

4. Injection Pressure Limitation. Injection pressure, measured at the surface, shall not exceed 2250 psi. Injection at a pressure which initiates new fractures or propagates existing fractures in the injection zone or in the confining zone adjacent to the injection zone or causes the movement of injection or formation fluids into an underground source of drinking water is prohibited.

5. Injection between the outermost casing protecting underground sources of drinking water and the well bore is prohibited, as is injection into any USDW.

6. The annulus between the tubing and the long string casing shall be filled with fresh water and a corrosion inhibitor additive. A minimum positive pressure of 100 psi shall be maintained on this annulus for monitoring purposes throughout the operation.

C. Plugging and Abandonment.

1. Plugging and Abandonment. The permittee shall plug and abandon the well as provided in the approved plugging and abandonment plan in Attachment Q (EPA Form 7520-14) of the permit application, which is hereby incorporated, and in accordance with the reporting and notification provisions of Section D.10. of Part II of this permit.

2. Plugging and Abandonment shall be conducted in such a manner that movement of fluids will not be allowed into or between underground sources of drinking water.

D. Financial Responsibility

1. The permittee shall maintain continuous compliance with the requirement to maintain financial responsibility and resources to close, plug and abandon the underground injection well in the amount of at least \$15,000 per well. If the acceptability of the Surety Bond with Standby Trust Agreement should change, the permittee shall provide advance notification to the Director. The permittee shall not substitute an alternative demonstration of financial responsibility for that which the Director has approved, unless he or she has previously submitted evidence of that alternative demonstration to the Director and the Director notifies him or her that the alternative demonstration of financial responsibility is acceptable. The Director may require the permittee to submit a revised demonstration of financial responsibility if the Director has reason to believe that the original demonstration is no longer adequate to cover the costs of plugging and abandonment.

2. Insolvency of Financial Institution. In the event of the bankruptcy of the trustee or issuing institution of the financial mechanism, or a suspension or revocation of the authority of the trustee institution to act as trustee or the institution issuing

the financial mechanism to issue such an instrument, the permittee must immediately notify the Director and submit an alternative demonstration of financial responsibility acceptable to the Director within sixty days after such event.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III

841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

UNDERGROUND INJECTION CONTROL PERMIT NUMBER VAS1X932BSMY
AUTHORIZATION TO OPERATE THREE (3) 1X INJECTION WELLS

In compliance with provisions of the Safe Drinking Water Act, as amended, (42 U.S.C. §§ 300f-300j-11, commonly known as the SDWA), the Resource Conservation and Recovery Act (42 U.S.C. §§ 6901-6991i, commonly known as RCRA) and attendant regulations promulgated by the U. S. Environmental Protection Agency under Title 40 of the Code of Federal Regulations,

Virginia Gas Company

Post Office Box 2407

Abingdon, Virginia 24210


is authorized by this permit to inject fluids through three Class 1X injection wells from a facility located at the Saltville Storage Project in Saltville, Virginia into the Devonian Shale, Huntersville, Oriskany, Clinton and Clinch Formations injection interval in accordance with the conditions set forth herein.

All references to Title 40 of the Code of Federal Regulations are to all regulations that are in effect on the date that this permit is effective.

This permit shall become effective on April 29, 1996.

This permit and its authorization to inject shall remain in effect until midnight April 29, 2006.

Signed this 29th day of April, 1996.


Alvin R. Morris, Director
Water Protection Division



PART I

A. Effect of Permit

The permittee is allowed to engage in underground injection in accordance with the conditions of this permit. The underground injection activity, otherwise authorized by this permit, shall not allow the movement of fluid containing any contaminant into underground sources of drinking water, if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR Part 141 or may otherwise adversely affect the health of persons. Any underground injection activity not authorized in this permit or otherwise authorized by rule is prohibited. Issuance of this permit does not convey property rights or mineral rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of State or local law or regulations. Compliance with terms of this permit does not constitute a defense to any action brought under Part C and the imminent and substantial endangerment provisions in Part D of the Safe Drinking Water Act (SDWA) or any other common or statutory law for any breach of any other applicable legal duty.

B. Permit Actions

This permit can be modified, revoked and reissued or terminated for cause as specified in 40 CFR §§ 144.12, 144.39 and 144.40. Also, the permit is subject to minor modifications as specified in 40 CFR § 144.41. The filing of a request for a permit modification, revocation and reissuance, or termination, or the notification of planned changes, or anticipated noncompliance on the part of the permittee shall not stay the applicability or enforceability of any permit condition.

C. Severability

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

D. General Requirements

1. Duty to Comply. The permittee shall comply with all applicable UIC Program regulations and conditions of this permit. Any permit noncompliance constitutes a violation of the SDWA and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or for denial of a permit renewal application.

2. Need to Halt or Reduce Activity Not a Defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3. Duty to Mitigate. The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

4. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control and related appurtenances which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this permit.

5. Duty to Provide Information. The permittee shall furnish the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit. If the permittee becomes aware of any incomplete or incorrect information in the permit application or subsequent reports, the permittee shall promptly submit information addressing these deficiencies.

6. Inspection and Entry. The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:

a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d. Sample or monitor any substances or parameters at any location, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by SDWA.

7. Penalties. Any person who violates a permit requirement is subject to civil penalties, fines and other enforcement actions under the SDWA and may be subject to the same such actions pursuant to RCRA. Any person who willfully violates permit conditions is subject to criminal prosecution.

8. Transfer of Permits. This permit is not transferable to any person except after notice is sent on EPA Form 7520-7 and approval is given by the Director and the requirements of 40 CFR § 144.38 are satisfied. The Director may require modification or revocation of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Safe Drinking Water Act.

9. Signatory Requirements.

a. All reports required by this permit and other information requested by the Director shall be signed as follows:

- (1) for a corporation, by a responsible corporate officer of at least the level of vice-president;
- (2) for a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
- (3) for a Municipality, State, Federal, or other public agency by either a principal executive or a ranking elected official.

b. A duly authorized representative of the official designated in paragraph a. above may also sign only if:

- (1) the authorization is made in writing by a person described in paragraph a. above;
- (2) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or a position of equivalent responsibility. A duly authorized representative may thus be either a named individual or any individual occupying a named position; and
- (3) the written authorization is submitted to the Director.

c. If an authorization under paragraph b. of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph b. of this section must be submitted to the Director prior to or together with any reports, information or applications to be signed by an authorized representative.

d. Any person signing a document under paragraph a. or b. of this section shall make the following certification:

"I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

10. Confidentiality of Information.

a. In accordance with 40 CFR Parts 2 (Public Information) and § 144.5, any information submitted to the Director pursuant to these permits may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice. If a claim is asserted, the information will be treated in accordance with the procedures in 40 CFR Part 2 and § 144.5 (Public Information).

b. Claims of confidentiality for the following information will be denied:

- (1) The name and address of any permit applicant or permittee.
- (2) Information which deals with the existence, absence, or level of contaminants in drinking water.

11. Reapplication. If the permittee wishes to continue operations regulated by this permit, after the expiration date of this permit, the permittee must submit a letter notifying EPA of their intent to continue operations at least 120 days before this permit expires.

12. State Laws. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation.

PART II

A. General

Copies of all reports and notifications required by this permit shall be signed and certified in accordance with the requirements of Section D(9) of Part I of this permit and shall be submitted to the Director at the following address:

Water Protection Division
Safe Drinking Water Act Branch (3WP32)
U. S. Environmental Protection Agency
Region III
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Philadelphia, Pennsylvania 19107

B. Record Retention

1. The permittee shall retain records of all monitoring and other information required by this permit, including the following (if applicable), for a period of at least five years from the date the application was signed. This period may be extended by request of the Director at any time.

a. All data required to complete the permit application form for this permit and any supplemental information submitted under 40 CFR § 144.31.

b. Calibrations and maintenance records and all original strip chart recordings for continuous monitoring instrumentation.

c. Copies of all reports required by this permit.

d. The nature and composition of all injected fluids until three years after the completion of any plugging and abandonment procedures specified by this permit and 40 CFR § 146.10.

2. The permittee shall continue to retain the records after the above specified retention periods unless he or she delivers the records to the Director or obtains written approval from the Director to discard the records.

3. Records of monitoring information shall include:

- a. The date, exact place, and the time of sampling or measurements;
- b. The individual(s) who performed the sampling or measurements;
- c. A precise description of both sampling methodology and the handling (custody) of samples;
- d. The date(s) analyses were performed;
- e. The individual(s) who performed the analyses;
- f. The analytical techniques or methods used; and
- g. The results of such analyses.

4. Monitoring of the nature of injected fluids shall comply with applicable analytical methods cited below.

5. All environmental measurements required by the permit, including, but not limited to measurements of pressure, temperature, mechanical integrity (as applicable) and chemical analyses shall be done in accordance with EPA guidance on quality assurance.

C. Monitoring Requirements

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the fluid to be analyzed and the procedure for analysis of the sample shall be in accordance with test procedures approved under 40 CFR § 136.3 unless otherwise approved by the Director. The permittee shall identify the types of tests and methods used to generate the monitoring data.

2. Continuous recording devices shall be used to monitor injection pressure, flow rate, cumulative volume and the annular pressure between the tubing and the long string casing.

3. The nature of the injected fluid shall be analyzed for the parameters listed below at the initiation of the injection operation. Thereafter, the injection fluid shall be analyzed every two years.

- pH
- Specific Gravity
- Specific Conductance
- Sodium
- Iron
- Magnesium
- Chloride
- Manganese
- Total Dissolved Solids
- Barium
- Hydrogen Sulfide
- Dissolved Oxygen
- TOC

4. A demonstration of mechanical integrity in accordance with 40 CFR § 146.8 shall be made at least once every five years on each well. Subsequent demonstrations shall be conducted no more than 30 days prior to the anniversary date of the initial demonstration. In addition to the above requirement, a mechanical integrity test demonstration shall be conducted whenever protective casing or tubing is removed from a well, the packer is reseated, or a well failure is evident. The permittee may continue operation only if he or she has successfully demonstrated to the Director the mechanical integrity of the permitted wells. The permittee shall cease injection operations if a loss of mechanical integrity becomes evident or if mechanical integrity cannot be demonstrated. Any such test shall be conducted in keeping with the notification requirements of Permit Condition D.12. of Part II of this permit. Results of this test shall be submitted with the first quarterly report after completion of the test.

5. Monitoring of the pressure buildup in the injection zone shall be performed annually. At a minimum, this will require the wells to be shut-in for a sufficient period of time to conduct a valid observation of the pressure fall-off curve. Results of this test shall be submitted with the first quarterly report after completion of the test.

D. Reporting and Notification Requirements.

1. Report on Permit Review. Within 30 days of receipt of this permit, the permittee shall report to the Director that he or she has read and is personally familiar with all terms and conditions of this permit.

2. Commencing Injection. The operator of a new injection well(s) may not commence injection until construction is complete, and

a. The permittee has demonstrated to EPA that the injection well(s) has/have mechanical integrity in accordance with 40 CFR § 146.8 and the permittee has received written notice from the Director that such demonstration is satisfactory;

b. The permittee has submitted notice of completion of construction (EPA Form 7520-10) to the Director; and

c. The Director has inspected or otherwise reviewed the new injection well(s) and finds it is in compliance with the conditions of the permit; or

d. The permittee has not received notice from the Director of his or her intent to inspect or otherwise review the new injection well(s) within 13 days of the date of the notice in paragraph (a) of this permit condition, in which case, prior inspection or review is waived and the permittee may commence injection.

3. Twenty-four Hour Reporting.

a. The permittee shall report to the Director any noncompliance which may endanger health or the environment. Any information shall be provided orally (phone number: (215) 566-5445) within 24 hours from the time the permittee becomes aware of the circumstances. The following shall be included as information which must be reported orally within 24 hours:

(1) Any monitoring or other information which indicates that any contaminant may cause an endangerment to an underground source of drinking water.

(2) Any noncompliance with a permit condition, or malfunction of the injection system which may cause fluid migration into or between underground sources of drinking water, or failure of mechanical integrity test demonstrations.

b. A written submission shall also be provided within five days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

4. Anticipated Noncompliance. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

5. Other Compliance. The permittee shall report all other instances of noncompliance not reported at the time monitoring reports are submitted. The reports shall contain the information listed in Permit Condition D.3., of Part II of this permit.

6. Planned Changes. The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility.

7. Conversion. The permittee shall notify the Director thirty days prior to the conversion of the well to an operating status other than an injection well.

8. Temporary Abandonment. The permittee shall notify the Director prior to the temporary abandonment of an injection well.

9. Quarterly Reports. The permittee shall submit quarterly reports (using EPA Form 7520-11) to the Director summarizing the results of the monitoring required by Permit Condition C of Part II of this permit. These reports shall include each well's monthly average, maximum, and minimum values for injection pressure, flow rate, cumulative volume, and annular pressure, the results of any mechanical integrity test(s), and the results of any fluid analysis. The quarterly reports shall be submitted not later than April 30, July 31, October 31, and January 31. Each report will provide the required information from the previous three month period.

10. Plugging and Abandonment Reports and Notifications.

a. The permittee shall notify the Director 45 days before the plugging and abandonment of the well. The Director may allow a shorter notice period upon written request.

b. Revisions to the Plugging and Abandonment Plan must be submitted to the Director no less than 45 days prior to plugging and abandonment. The Director must approve the revisions prior to the start of plugging operations.

c. Within 60 days after plugging the well, the permittee shall submit a report to the Director which shall consist of either:

(1) A statement that the well was plugged in accordance with the plan previously submitted to and approved by the Director; or

(2) Where actual plugging differed from the plan previously submitted, an updated version of the plan, on the form supplied by the Director, specifying the different procedures used. Any deviation from a previously approved plan, which may endanger Underground Sources of Drinking Water, is cause for the Director to require the operator to replug the well.

The report shall be certified as accurate by the person who performed the plugging operation.

11. Compliance Schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 30 days following each schedule date.

12. Mechanical Integrity Tests. The permittee shall notify the Director of his or her intent to conduct a mechanical integrity test at least 30 days prior to such a demonstration.

13. Cessation of Injection Activity. After a cessation of injection for two years the owner or operator shall plug and abandon the well in accordance with the Plugging and Abandonment Plan unless he or she:

a. Provides written notice to the Director; and

b. Describes actions or procedures, satisfactory to the Director, that the permittee will take to ensure that the well will not endanger USDWs during the period of temporary abandonment. These actions and procedures shall include compliance with the technical requirements applicable to an active injection well unless waived in writing by the Director.

E. Mechanical Integrity Standards

1. Standards. The permittee shall have and maintain the mechanical integrity of the permitted injection(s) well pursuant to 40 CFR § 146.8.

2. Request from Director. The Director may, by written notice, require the permittee to demonstrate mechanical integrity at any time.

PART III

A. Construction Requirements

1. Notwithstanding any other provision of this permit, the injection well(s) shall inject only into formations which are separated from any underground source of drinking water by a confining zone that is free of known open faults or fractures within the Area of Review.

2. Casing and Cementing. The permittee shall case and cement each well to prevent the movement of fluids into or between underground sources of drinking water. The casing and cement used in the construction of each well shall be designed for the life expectancy of the well and, at a minimum, the operation shall be conducted in accordance with the construction details described in the permittee's permit application as well as any conditions

highlighted below. However, in all cases cemented surface casing shall be installed from the surface to a depth at least fifty feet below the lowermost underground source of drinking water, each subsequent string of casing shall be cemented back to at least 50 feet above the base of the next longest casing string and the injection zone shall be isolated by the placement of a tubing and packer inside the long string casing.

3. Logs and Tests. At a minimum the following logs and/or tests shall be conducted during the drilling and construction of each injection well: For surface casing intended to protect underground sources of drinking water: gamma ray, resistivity, and caliper prior to the casing being installed and a cement bond/variable density or temperature log after the casing is set and cemented. For intermediate and long string casings: gamma ray, resistivity, porosity and caliper prior to the casing being installed and a cement bond/variable density or temperature log after the casing is set and cemented.

The permittee shall submit a narrative report that interprets log and test results which specifically relate to the results of the cementing operation. Further, the narrative shall detail the rationale used to make these interpretations. The narrative report shall be prepared by a knowledgeable log analyst and submitted to the Director. The Director may prescribe additional logs or waive logging requirements in the future should field conditions so warrant.

4. Mechanical Integrity. Injection operations are prohibited until the permittee demonstrates that the well covered by this permit has mechanical integrity in accordance with 40 CFR § 146.8 and the permittee has received notice from the Director that such a demonstration is satisfactory in accordance with the provisions of Condition D.2. of Part II of this permit.

5. Corrective Action. Injection operations are prohibited until the permittee has successfully performed the activities detailed in the Corrective Action Plan, specified in Attachment C of the permit application and hereby incorporated.

6. Completion Reports. The results of those activities required in Part III, Section A, 1 through 5 of this permit must be summarized and submitted to the Director prior to the commencement of injection operations as part of the Completion Reports.

B. Operating Requirements

1. Injection Formation. Injection shall be limited to the Devonian Shales, Huntersville, Oriskany, Clinton and Clinch Formations in the subsurface interval below 6000 feet and above 8600 feet.

2. Injection Fluid. The permittee shall not inject any hazardous substances, as defined by 40 CFR 261 nor any other fluid, other than the brine fluid generated from the Class III solution mining process.

3. Injection Volume Limitation. The facility's injection volume shall not exceed 1800 barrels per day. The monthly average for the facility shall not exceed 960 barrels per day (or a total of 28,800 barrels per month).

4. Injection Pressure Limitation. Injection pressure, measured at the surface, shall not exceed 1590 psi. Injection at a pressure which initiates new fractures or propagates existing fractures in the injection zone or in the confining zone adjacent to the injection zone or causes the movement of injection or formation fluids into an underground source of drinking water is prohibited.

5. Injection between the outermost casing protecting underground sources of drinking water and the well bore is prohibited, as is injection into any USDW.

6. The annulus between the tubing and the long string casing shall be filled with fresh water and a corrosion inhibitor additive. A minimum positive pressure of 100 psi shall be maintained on this annulus for monitoring purposes throughout the operation.

C. Plugging and Abandonment.

1. Plugging and Abandonment. The permittee shall plug and abandon the well as provided in the approved plugging and abandonment plan in Attachment Q (EPA Form 7520-14) of the permit application, which is hereby incorporated, and in accordance with the reporting and notification provisions of Section D.10. of Part II of this permit.

2. Plugging and Abandonment shall be conducted in such a manner that movement of fluids will not be allowed into or between underground sources of drinking water.

D. Financial Responsibility

1. The permittee shall maintain continuous compliance with the requirement to maintain financial responsibility and resources to close, plug and abandon the underground injection well in the amount of at least \$15,000 per well. If the acceptability of the Surety Bond with Standby Trust Agreement should change, the permittee shall provide advance notification to the Director. The permittee shall not substitute an alternative demonstration of financial responsibility for that which the Director has approved,

unless he or she has previously submitted evidence of that alternative demonstration to the Director and the Director notifies him or her that the alternative demonstration of financial responsibility is acceptable. The Director may require the permittee to submit a revised demonstration of financial responsibility if the Director has reason to believe that the original demonstration is no longer adequate to cover the costs of plugging and abandonment.

2. Insolvency of Financial Institution. In the event of the bankruptcy of the trustee or issuing institution of the financial mechanism, or a suspension or revocation of the authority of the trustee institution to act as trustee or the institution issuing the financial mechanism to issue such an instrument, the permittee must immediately notify the Director and submit an alternative demonstration of financial responsibility acceptable to the Director within sixty days after such event.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III

841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

UNDERGROUND INJECTION CONTROL (UIC) PROGRAM

NOTICE OF FINAL PERMITS

The United States Environmental Protection Agency, Region III, announced on April 29, 1996, the issuance of two final permits under the authority of the Federal UIC Regulations at 40 CFR Parts 124, 144, 146, and 147 to the Virginia Gas Company, Abingdon, Virginia. The company has been authorized to construct and operate three (3) Class IIIG and three (3) Class 1X injection wells used for the solution mining of salt and the disposal of produced fluid (brine), respectively, located at the Saltville Storage project, Saltville, Virginia. A federal permit is required to meet the provisions of the EPA administered UIC program in Virginia.

The Administrative Record for these permit actions remain available for public inspection during normal business hours at the office of the Safe Drinking Water Act Branch of EPA Region III, 841 Chestnut Building, in Philadelphia, Pennsylvania. All information submitted by the applicant, unless deemed confidential, is available to the public in the Administrative Record. The Administrative Record includes the permit application and all related correspondence. A copy of the final permits are available for inspection at the Saltville Public Library, Main Street, Saltville, Virginia.

EPA solicited public comment on the proposal to issue final UIC permits for this facility. Written public comments and requests for a public hearing were to be submitted until April 9, 1996. The public hearing scheduled for April 16, 1996 at the Town Hall Square, Corner of Palmer Avenue and Stadium Drive, Saltville, Virginia was not held since EPA did not receive any written requests for a hearing. EPA expressly reserved the right to cancel this hearing unless a significant degree of public interest was evidenced.

Interested persons may obtain further information, including copies of the permits, by contacting Lillie Ellerbe, Safe Drinking Water Act Branch (3WP32), Office of Compliance and Enforcement, U.S. EPA, 841 Chestnut Building, Philadelphia, Pennsylvania, 19107, or by phone at (215) 597-8129.





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**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III**

841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

**MAJOR MODIFICATION
UNDERGROUND INJECTION CONTROL PERMIT NUMBER VAS1X932BSMY
AUTHORIZATION TO OPERATE THREE (3) 1X INJECTION WELLS**

In compliance with provisions of the Safe Drinking Water Act, as amended, (42 U.S.C. §§ 300f-300j-11, commonly known as the SDWA), the Resource Conservation and Recovery Act (42 U.S.C. §§ 6901-6991i, commonly known as RCRA) and attendant regulations promulgated by the U. S. Environmental Protection Agency under Title 40 of the Code of Federal Regulations,

Virginia Gas Pipeline Company

Post Office Box 2407

Abingdon, Virginia 24212

is authorized by this permit to inject fluids through three Class 1X injection wells from a facility located at the Saltville Storage Project in Saltville, Virginia into the Devonian Shale, Huntersville, Oriskany, Clinton and Clinch Formations injection interval in accordance with the conditions set forth herein.

All references to Title 40 of the Code of Federal Regulations are to all regulations that are in effect on the date that this permit is effective.

This permit became effective on April 29, 1996.

This permit modification shall become effective on _____.

This permit and its authorization to inject shall remain in effect until midnight April 29, 2006.

Signed this _____ day of _____, 1997.

Alvin R. Morris, Director
Water Protection Division

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III

841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

UNDERGROUND INJECTION CONTROL PERMIT NUMBER VAS1X932BSMY
AUTHORIZATION TO OPERATE THREE (3) 1X INJECTION WELLS

In compliance with provisions of the Safe Drinking Water Act, as amended, (42 U.S.C. §§ 300f-300j-11, commonly known as the SDWA), the Resource Conservation and Recovery Act (42 U.S.C. §§ 6901-6991i, commonly known as RCRA) and attendant regulations promulgated by the U. S. Environmental Protection Agency under Title 40 of the Code of Federal Regulations,

Virginia Gas Company

Post Office Box 2407

Abingdon, Virginia 24210


is authorized by this permit to inject fluids through three Class 1X injection wells from a facility located at the Saltville Storage Project in Saltville, Virginia into the Devonian Shale, Huntersville, Oriskany, Clinton and Clinch Formations injection interval in accordance with the conditions set forth herein.

All references to Title 40 of the Code of Federal Regulations are to all regulations that are in effect on the date that this permit is effective.

This permit shall become effective on April 29, 1996.

This permit and its authorization to inject shall remain in effect until midnight April 29, 2006.

Signed this 29th day of April, 1996.


Alvin R. Morris Director
Water Protection Division



PART I

A. Effect of Permit

The permittee is allowed to engage in underground injection in accordance with the conditions of this permit. The underground injection activity, otherwise authorized by this permit, shall not allow the movement of fluid containing any contaminant into underground sources of drinking water, if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR Part 141 or may otherwise adversely affect the health of persons. Any underground injection activity not authorized in this permit or otherwise authorized by rule is prohibited. Issuance of this permit does not convey property rights or mineral rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of State or local law or regulations. Compliance with terms of this permit does not constitute a defense to any action brought under Part C and the imminent and substantial endangerment provisions in Part D of the Safe Drinking Water Act (SDWA) or any other common or statutory law for any breach of any other applicable legal duty.

B. Permit Actions

This permit can be modified, revoked and reissued or terminated for cause as specified in 40 CFR §§ 144.12, 144.39 and 144.40 . Also, the permit is subject to minor modifications as specified in 40 CFR § 144.41: The filing of a request for a permit modification, revocation and reissuance, or termination, or the notification of planned changes, or anticipated noncompliance on the part of the permittee shall not stay the applicability or enforceability of any permit condition.

C. Severability

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

D. General Requirements

1. Duty to Comply. The permittee shall comply with all applicable UIC Program regulations and conditions of this permit. Any permit noncompliance constitutes a violation of the SDWA and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or for denial of a permit renewal application.

2. Need to Halt or Reduce Activity Not a Defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3. Duty to Mitigate. The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

4. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control and related appurtenances which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this permit.

5. Duty to Provide Information. The permittee shall furnish the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit. If the permittee becomes aware of any incomplete or incorrect information in the permit application or subsequent reports, the permittee shall promptly submit information addressing these deficiencies.

6. Inspection and Entry. The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:

a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d. Sample or monitor any substances or parameters at any location, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by SDWA.

7. Penalties. Any person who violates a permit requirement is subject to civil penalties, fines and other enforcement actions under the SDWA and may be subject to the same such actions pursuant to RCRA. Any person who willfully violates permit conditions is subject to criminal prosecution.

8. Transfer of Permits. This permit is not transferable to any person except after notice is sent on EPA Form 7520-7 and approval is given by the Director and the requirements of 40 CFR § 144.38 are satisfied. The Director may require modification or revocation of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Safe Drinking Water Act.

9. Signatory Requirements.

a. All reports required by this permit and other information requested by the Director shall be signed as follows:

- (1) for a corporation, by a responsible corporate officer of at least the level of vice-president;

- (2) for a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
- (3) for a Municipality, State, Federal, or other public agency by either a principal executive or a ranking elected official.

b. A duly authorized representative of the official designated in paragraph a. above may also sign only if:

- (1) the authorization is made in writing by a person described in paragraph a. above;
- (2) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or a position of equivalent responsibility. A duly authorized representative may thus be either a named individual or any individual occupying a named position; and
- (3) the written authorization is submitted to the Director.

c. If an authorization under paragraph b. of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph b. of this section must be submitted to the Director prior to or together with any reports, information or applications to be signed by an authorized representative.

d. Any person signing a document under paragraph a. or b. of this section shall make the following certification:

"I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all

attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

10. Confidentiality of Information.

a. In accordance with 40 CFR Parts 2 (Public Information) and § 144.5, any information submitted to the Director pursuant to these permits may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice. If a claim is asserted, the information will be treated in accordance with the procedures in 40 CFR Part 2 and § 144.5 (Public Information).

b. Claims of confidentiality for the following information will be denied:

- (1) The name and address of any permit applicant or permittee.
- (2) Information which deals with the existence, absence, or level of contaminants in drinking water.

11. Reapplication. If the permittee wishes to continue operations regulated by this permit, after the expiration date of this permit, the permittee must submit a letter notifying EPA of their intent to continue operations at least 120 days before this permit expires.

12. State Laws. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation.

PART II

A. General

Copies of all reports and notifications required by this permit shall be signed and certified in accordance with the requirements of Section D(9) of Part I of this permit and shall be submitted to the Director at the following address:

Water Protection Division
Safe Drinking Water Act Branch (3WP32)
U. S. Environmental Protection Agency
Region III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

B. Record Retention

1. The permittee shall retain records of all monitoring and other information required by this permit, including the following (if applicable), for a period of at least five years from the date the application was signed. This period may be extended by request of the Director at any time.

a. All data required to complete the permit application form for this permit and any supplemental information submitted under 40 CFR § 144.31.

b. Calibrations and maintenance records and all original strip chart recordings for continuous monitoring instrumentation.

c. Copies of all reports required by this permit.

d. The nature and composition of all injected fluids until three years after the completion of any plugging and abandonment procedures specified by this permit and 40 CFR § 146.10.

2. The permittee shall continue to retain the records after the above specified retention periods unless he or she delivers the

records to the Director or obtains written approval from the Director to discard the records.

3. Records of monitoring information shall include:

- a. The date, exact place, and the time of sampling or measurements;
- b. The individual(s) who performed the sampling or measurements;
- c. A precise description of both sampling methodology and the handling (custody) of samples;
- d. The date(s) analyses were performed;
- e. The individual(s) who performed the analyses;
- f. The analytical techniques or methods used; and
- g. The results of such analyses.

4. Monitoring of the nature of injected fluids shall comply with applicable analytical methods cited below.

5. All environmental measurements required by the permit, including, but not limited to measurements of pressure, temperature, mechanical integrity (as applicable) and chemical analyses shall be done in accordance with EPA guidance on quality assurance.

C. Monitoring Requirements

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the fluid to be analyzed and the procedure for analysis of the sample shall be in accordance with test procedures approved under 40 CFR § 136.3 unless otherwise approved by the Director. The permittee shall identify the types of tests and methods used to generate the monitoring data.

2. Continuous recording devices shall be used to monitor injection pressure, flow rate, cumulative volume and the annular pressure between the tubing and the long string casing.

3. The nature of the injected fluid shall be analyzed for the parameters listed below at the initiation of the injection operation. Thereafter, the injection fluid shall be analyzed every two years.

-pH	-Manganese
-Specific Gravity	-Total Dissolved Solids
-Specific Conductance	-Barium
-Sodium	-Hydrogen Sulfide
-Iron	-Dissolved Oxygen
-Magnesium	-TOC
-Chloride	

4. A demonstration of mechanical integrity in accordance with 40 CFR § 146.8 shall be made at least once every five years on each well. Subsequent demonstrations shall be conducted no more than 30 days prior to the anniversary date of the initial demonstration. In addition to the above requirement, a mechanical integrity test demonstration shall be conducted whenever protective casing or tubing is removed from a well, the packer is reseated, or a well failure is evident. The permittee may continue operation only if he or she has successfully demonstrated to the Director the mechanical integrity of the permitted wells. The permittee shall cease injection operations if a loss of mechanical integrity becomes evident or if mechanical integrity cannot be demonstrated. Any such test shall be conducted in keeping with the notification requirements of Permit Condition D.12. of Part II of this permit. Results of this test shall be submitted with the first quarterly report after completion of the test.

5. Monitoring of the pressure buildup in the injection zone shall be performed annually. At a minimum, this will require the wells to be shut-in for a sufficient period of time to conduct a valid observation of the pressure fall-off curve. Results of this test shall be submitted with the first quarterly report after completion of the test.

D. Reporting and Notification Requirements.

1. Report on Permit Review. Within 30 days of receipt of this permit, the permittee shall report to the Director that he or she has read and is personally familiar with all terms and conditions of this permit.

2. Commencing Injection. The operator of a new injection well(s) may not commence injection until construction is complete, and

a. The permittee has demonstrated to EPA that the injection well(s) has/have mechanical integrity in accordance with 40 CFR § 146.8 and the permittee has received written notice from the Director that such demonstration is satisfactory;

b. The permittee has submitted notice of completion of construction (EPA Form 7520-10) to the Director; and

c. The Director has inspected or otherwise reviewed the new injection well(s) and finds it is in compliance with the conditions of the permit; or

d. The permittee has not received notice from the Director of his or her intent to inspect or otherwise review the new injection well(s) within 13 days of the date of the notice in paragraph (a) of this permit condition, in which case, prior inspection or review is waived and the permittee may commence injection.

3. Twenty-four Hour Reporting.

a. The permittee shall report to the Director any noncompliance which may endanger health or the environment. Any information shall be provided orally (phone number: (215) 566-5445) within 24 hours from the time the permittee becomes aware of the circumstances. The following shall be included as information which must be reported orally within 24 hours:

(1) Any monitoring or other information which indicates that any contaminant may cause an endangerment to an underground source of drinking water.

(2) Any noncompliance with a permit condition, or malfunction of the injection system which may cause fluid migration into or between underground sources of drinking water, or failure of mechanical integrity test demonstrations.

b. A written submission shall also be provided within five days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

4. Anticipated Noncompliance. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

5. Other Compliance. The permittee shall report all other instances of noncompliance not reported at the time monitoring reports are submitted. The reports shall contain the information listed in Permit Condition D.3., of Part II of this permit.

6. Planned Changes. The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility.

7. Conversion. The permittee shall notify the Director thirty days prior to the conversion of the well to an operating status other than an injection well.

8. Temporary Abandonment. The permittee shall notify the Director prior to the temporary abandonment of an injection well.

9. Quarterly Reports. The permittee shall submit quarterly reports (using EPA Form 7520-11) to the Director summarizing the results of the monitoring required by Permit Condition C of Part II of this permit. These reports shall include each well's monthly average, maximum, and minimum values for injection pressure, flow rate, cumulative volume, and annular pressure, the results of any mechanical integrity test(s), and the results of any fluid analysis. The quarterly reports shall be submitted not later than April 30, July 31, October 31, and January 31. Each report will provide the required information from the previous three month period.

10. Plugging and Abandonment Reports and Notifications.

a. The permittee shall notify the Director 45 days before the plugging and abandonment of the well. The Director may allow a shorter notice period upon written request.

b. Revisions to the Plugging and Abandonment Plan must be submitted to the Director no less than 45 days prior to plugging and abandonment. The Director must approve the revisions prior to the start of plugging operations.

c. Within 60 days after plugging the well, the permittee shall submit a report to the Director which shall consist of either:

(1) A statement that the well was plugged in accordance with the plan previously submitted to and approved by the Director; or

(2) Where actual plugging differed from the plan previously submitted, an updated version of the plan, on the form supplied by the Director, specifying the different procedures used. Any deviation from a previously approved plan, which may endanger Underground Sources of Drinking Water, is cause for the Director to require the operator to replug the well.

The report shall be certified as accurate by the person who performed the plugging operation.

11. Compliance Schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 30 days following each schedule date.

12. Mechanical Integrity Tests. The permittee shall notify the Director of his or her intent to conduct a mechanical integrity test at least 30 days prior to such a demonstration.

13. Cessation of Injection Activity. After a cessation of injection for two years the owner or operator shall plug and abandon the well in accordance with the Plugging and Abandonment Plan unless he or she:

a. Provides written notice to the Director; and

b. Describes actions or procedures, satisfactory to the Director, that the permittee will take to ensure that the well will not endanger USDWs during the period of temporary abandonment. These actions and procedures shall include compliance with the technical requirements applicable to an active injection well unless waived in writing by the Director.

E. Mechanical Integrity Standards

1. Standards. The permittee shall have and maintain the mechanical integrity of the permitted injection(s) well pursuant to 40 CFR § 146.8.

2. Request from Director. The Director may, by written notice, require the permittee to demonstrate mechanical integrity at any time.

PART III

A. Construction Requirements

1. Notwithstanding any other provision of this permit, the injection well(s) shall inject only into formations which are separated from any underground source of drinking water by a

confining zone that is free of known open faults or fractures within the Area of Review.

2. Casing and Cementing. The permittee shall case and cement each well to prevent the movement of fluids into or between underground sources of drinking water. The casing and cement used in the construction of each well shall be designed for the life expectancy of the well and, at a minimum, the operation shall be conducted in accordance with the construction details described in the permittee's permit application as well as any conditions highlighted below. However, in all cases cemented surface casing shall be installed from the surface to a depth at least fifty feet below the lowermost underground source of drinking water, each subsequent string of casing shall be cemented back to at least 50 feet above the base of the next longest casing string and the injection zone shall be isolated by the placement of a tubing and packer inside the long string casing.

3. Logs and Tests. At a minimum the following logs and/or tests shall be conducted during the drilling and construction of each injection well: For surface casing intended to protect underground sources of drinking water: gamma ray, resistivity, and caliper prior to the casing being installed and a cement bond/variable density or temperature log after the casing is set and cemented. For intermediate and long string casings: gamma ray, resistivity, porosity and caliper prior to the casing being installed and a cement bond/variable density or temperature log after the casing is set and cemented.

The permittee shall submit a narrative report that interprets log and test results which specifically relate to the results of the cementing operation. Further, the narrative shall detail the rationale used to make these interpretations. The narrative report shall be prepared by a knowledgeable log analyst and submitted to the Director. The Director may prescribe additional logs or waive logging requirements in the future should field conditions so warrant.

4. Mechanical Integrity. Injection operations are prohibited until the permittee demonstrates that the well covered by this permit has mechanical integrity in accordance with 40 CFR

§ 146.8 and the permittee has received notice from the Director that such a demonstration is satisfactory in accordance with the provisions of Condition D.2. of Part II of this permit.

5. Corrective Action. Injection operations are prohibited until the permittee has successfully performed the activities detailed in the Corrective Action Plan, specified in Attachment C of the permit application and hereby incorporated.

6. Completion Reports. The results of those activities required in Part III, Section A, 1 through 5 of this permit must be summarized and submitted to the Director prior to the commencement of injection operations as part of the Completion Reports.

B. Operating Requirements

1. Injection Formation. Injection shall be limited to the Price Formation in the subsurface interval between 5610 feet and 5884 feet.

2. Injection Fluid. The permittee shall not inject any hazardous substances, as defined by 40 CFR 261 nor any other fluid, other than the brine fluid generated from the Class III solution mining process.

3. Injection Volume Limitation. The facility's injection volume shall not exceed 1800 barrels per day. The monthly average for the facility shall not exceed 960 barrels per day (or a total of 28,800 barrels per month).

4. Injection Pressure Limitation. Injection pressure, measured at the surface, shall not exceed 2250 psi. Injection at a pressure which initiates new fractures or propagates existing fractures in the injection zone or in the confining zone adjacent to the injection zone or causes the movement of injection or formation fluids into an underground source of drinking water is prohibited.

5. Injection between the outermost casing protecting underground sources of drinking water and the well bore is prohibited, as is injection into any USDW.

6. The annulus between the tubing and the long string casing shall be filled with fresh water and a corrosion inhibitor additive. A minimum positive pressure of 100 psi shall be maintained on this annulus for monitoring purposes throughout the operation.

C. Plugging and Abandonment.

1. Plugging and Abandonment. The permittee shall plug and abandon the well as provided in the approved plugging and abandonment plan in Attachment Q (EPA Form 7520-14) of the permit application, which is hereby incorporated, and in accordance with the reporting and notification provisions of Section D.10. of Part II of this permit.

2. Plugging and Abandonment shall be conducted in such a manner that movement of fluids will not be allowed into or between underground sources of drinking water.

D. Financial Responsibility

1. The permittee shall maintain continuous compliance with the requirement to maintain financial responsibility and resources to close, plug and abandon the underground injection well in the amount of at least \$15,000 per well. If the acceptability of the Surety Bond with Standby Trust Agreement should change, the permittee shall provide advance notification to the Director. The permittee shall not substitute an alternative demonstration of financial responsibility for that which the Director has approved, unless he or she has previously submitted evidence of that alternative demonstration to the Director and the Director notifies him or her that the alternative demonstration of financial responsibility is acceptable. The Director may require the permittee to submit a revised demonstration of financial responsibility if the Director has reason to believe that the original demonstration is no longer adequate to cover the costs of plugging and abandonment.

2. Insolvency of Financial Institution. In the event of the bankruptcy of the trustee or issuing institution of the financial mechanism, or a suspension or revocation of the authority of the trustee institution to act as trustee or the institution issuing

VAS1X932BSMY

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the financial mechanism to issue such an instrument, the permittee must immediately notify the Director and submit an alternative demonstration of financial responsibility acceptable to the Director within sixty days after such event.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III

841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

UNDERGROUND INJECTION CONTROL (UIC) PROGRAM

NOTICE OF PERMIT MODIFICATION

The United States Environmental Protection Agency, Region III, announced on April 29, 1996, the issuance of two final permits under the authority of the Federal UIC Regulations at 40 CFR Parts 124, 144, 146 and 147 to the Virginia Gas Company, Abingdon, Virginia. The company has been authorized to construct and operate three (3) Class IIIG injection wells and three (3) Class IX injection wells used for the solution mining of salt and the disposal of the produced fluid (brine) from the solution mining process, respectively. The wells are to be located at the Saltville Storage Project in Saltville, Virginia. A federal permit is required to meet the provisions of the EPA administered UIC program in Virginia.

On January 2, 1997, EPA received a letter from Virginia Gas Company requesting that the Class IX permit, identified as VAS1X932BSMY, be modified. Specifically, Virginia Gas Company has requested that EPA modify the permit to reflect a change in the intended injection zone for the disposal of the brine fluid as well as to revise the maximum injection pressure permissible during operation. EPA has reviewed and analyzed the test data (e.g., injectivity testing of the Price Formation was conducted on December 11 and 12, 1996) submitted with the January 2, 1997 letter, to support the request for these modifications, and has found the information submitted acceptable. EPA is therefore approving the following permit modifications.

1. Part III.B.1., Injection Formation. This condition has been modified as follows: "Injection shall be limited to the Price Formation in the subsurface interval between 5610 feet and 5884 feet." Previously, this condition read, "Injection shall be limited to the Devonian Shales, Huntersville Chert, Oriskany, Clinton, and Clinch Formations in the subsurface interval below 6000 feet and above 8600 feet."

2. Part III.B.4., Injection Pressure Limitation. This condition has been modified as follows: "Injection pressure, measured at the surface, shall not exceed 2250 psi. ..." Previously, this condition permitted a maximum injection pressure of 1590 psi.

In addition to the modification of these two permit conditions, EPA required Virginia Gas Company to determine whether there were any additional wells within the permits prescribed area of review that penetrate the intended injection zone and could provide conduits for fluid migration out of the injection zone. The Company found that there are no additional wells within the area of review that penetrate the Price Formation. Also, prior to EPA providing authorization to inject into the Price Formation, Virginia Gas will be required to plug the injection well back from its current depth to a depth of at least 25 feet below the lowest intended injection interval in the Price Formation.



Sections 144.39 and 144.41 of the UIC regulations requires that any major permit modification be provided the opportunity for public comment. As such, EPA is soliciting public comment on the proposal to issue this permit modification for Virginia Gas Company.

The Administrative Record for this permitting action is available for public inspection during normal business hours at the office of the UIC program in the Safe Drinking Water Act Branch of EPA Region III in Philadelphia, Pennsylvania. All information submitted by the applicant, unless deemed confidential, is available to the public at the above location. A copy of the modified permit is available for public inspection at the Saltville Public Library, Main Street, Saltville, Virginia.

EPA solicits public comment on the proposal to issue a modification to the final UIC permit for this facility. A public hearing has been tentatively scheduled for March 11, 1997, at 7:00 PM at the Town Hall Square, Corner of Palmer Avenue and Stadium Drive, Saltville, Virginia. However, this hearing will be held only if there is a significant degree of interest expressed in the permit modification and this office receives written requests for a public hearing. Such written requests must state the nature of the proposed issues to be raised and must be submitted no later than February 28, 1997, to the contact person listed below. EPA expressly reserves the right to cancel this hearing unless a significant degree of public interest is evidenced.

Interested persons may obtain further information, including copies of the modified permit by contacting Lillie Ellerbe, Safe Drinking Water Act Branch (3WP32), U.S. EPA Region III, 841 Chestnut Building, Philadelphia, Pennsylvania 19107, or by phone at (215) 566-5454.



DRAFT

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III

841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

UNDERGROUND INJECTION CONTROL PERMIT NUMBER VAS1I932BSMY
AUTHORIZATION TO OPERATE THREE (3) 1I INJECTION WELLS

In compliance with provisions of the Safe Drinking Water Act, as amended, (42 U.S.C. §§ 300f-300j-11, commonly known as the SDWA), the Resource Conservation and Recovery Act (42 U.S.C. §§ 6901-6991i, commonly known as RCRA) and attendant regulations promulgated by the U. S. Environmental Protection Agency under Title 40 of the Code of Federal Regulations,

Virginia Gas Company

Post Office Box 2407

Abingdon, Virginia 24210

is authorized by this permit to inject fluids through three Class 1I injection wells from a facility located at the Saltville Storage Project in Saltville, Virginia into the Devonian Shale, Huntersville, Oriskany, Clinton and Clinch Formations injection interval in accordance with the conditions set forth herein.

All references to Title 40 of the Code of Federal Regulations are to all regulations that are in effect on the date that this permit is effective.

This permit shall become effective on _____.

This permit and its authorization to inject shall remain in effect until midnight _____.

Signed this _____ day of _____, 1996.

Alvin R. Morris, Director
Water Protection Division

DRAFT



PART I

A. Effect of Permit

The permittee is allowed to engage in underground injection in accordance with the conditions of this permit. The underground injection activity, otherwise authorized by this permit, shall not allow the movement of fluid containing any contaminant into underground sources of drinking water, if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR Part 141 or may otherwise adversely affect the health of persons. Any underground injection activity not authorized in this permit or otherwise authorized by rule is prohibited. Issuance of this permit does not convey property rights or mineral rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of State or local law or regulations. Compliance with terms of this permit does not constitute a defense to any action brought under Part C and the imminent and substantial endangerment provisions in Part D of the Safe Drinking Water Act (SDWA) or any other common or statutory law for any breach of any other applicable legal duty.

B. Permit Actions

This permit can be modified, revoked and reissued or terminated for cause as specified in 40 CFR §§ 144.12, 144.39 and 144.40. Also, the permit is subject to minor modifications as specified in 40 CFR § 144.41. The filing of a request for a permit modification, revocation and reissuance, or termination, or the notification of planned changes, or anticipated noncompliance on the part of the permittee shall not stay the applicability or enforceability of any permit condition.

C. Severability

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

D. General Requirements

1. Duty to Comply. The permittee shall comply with all applicable UIC Program regulations and conditions of this permit. Any permit noncompliance constitutes a violation of the SDWA and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or for denial of a permit renewal application.

2. Need to Halt or Reduce Activity Not a Defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3. Duty to Mitigate. The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

4. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control and related appurtenances which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this permit.

5. Duty to Provide Information. The permittee shall furnish the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit. If the permittee becomes aware of any incomplete or incorrect information in the permit application or subsequent reports, the permittee shall promptly submit information addressing these deficiencies.

6. Inspection and Entry. The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:

a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d. Sample or monitor any substances or parameters at any location, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by SDWA.

7. Penalties. Any person who violates a permit requirement is subject to civil penalties, fines and other enforcement actions under the SDWA and may be subject to the same such actions pursuant to RCRA. Any person who willfully violates permit conditions is subject to criminal prosecution.

8. Transfer of Permits. This permit is not transferable to any person except after notice is sent on EPA Form 7520-7 and approval is given by the Director and the requirements of 40 CFR § 144.38 are satisfied. The Director may require modification or revocation of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Safe Drinking Water Act.

9. Signatory Requirements.

a. All reports required by this permit and other information requested by the Director shall be signed as follows:

- (1) for a corporation, by a responsible corporate officer of at least the level of vice-president;
- (2) for a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
- (3) for a Municipality, State, Federal, or other public agency by either a principal executive or a ranking elected official.

b. A duly authorized representative of the official designated in paragraph a. above may also sign only if:

- (1) the authorization is made in writing by a person described in paragraph a. above;
- (2) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or a position of equivalent responsibility. A duly authorized representative may thus be either a named individual or any individual occupying a named position; and
- (3) the written authorization is submitted to the Director.

c. If an authorization under paragraph b. of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph b. of this section must be submitted to the Director prior to or together with any reports, information or applications to be signed by an authorized representative.

d. Any person signing a document under paragraph a. or b. of this section shall make the following certification:

"I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

10. Confidentiality of Information.

a. In accordance with 40 CFR Parts 2 (Public Information) and § 144.5, any information submitted to the Director pursuant to these permits may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice. If a claim is asserted, the information will be treated in accordance with the procedures in 40 CFR Part 2 and § 144.5 (Public Information).

b. Claims of confidentiality for the following information will be denied:

- (1) The name and address of any permit applicant or permittee.
- (2) Information which deals with the existence, absence, or level of contaminants in drinking water.

11. Reapplication. If the permittee wishes to continue operations regulated by this permit, after the expiration date of this permit, the permittee must submit a letter notifying EPA of their intent to continue operations at least 120 days before this permit expires.

12. State Laws. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation.

PART II

A. General

Copies of all reports and notifications required by this permit shall be signed and certified in accordance with the requirements of Section D(9) of Part I of this permit and shall be submitted to the Director at the following address:

Water Protection Division
Safe Drinking Water Act Branch (3WP32)
U. S. Environmental Protection Agency
Region III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

B. Record Retention

1. The permittee shall retain records of all monitoring and other information required by this permit, including the following (if applicable), for a period of at least five years from the date the application was signed. This period may be extended by request of the Director at any time.

a. All data required to complete the permit application form for this permit and any supplemental information submitted under 40 CFR § 144.31.

b. Calibrations and maintenance records and all original strip chart recordings for continuous monitoring instrumentation.

c. Copies of all reports required by this permit.

d. The nature and composition of all injected fluids until three years after the completion of any plugging and abandonment procedures specified by this permit and 40 CFR § 146.10.

2. The permittee shall continue to retain the records after the above specified retention periods unless he or she delivers the records to the Director or obtains written approval from the Director to discard the records.

3. Records of monitoring information shall include:

- a. The date, exact place, and the time of sampling or measurements;
- b. The individual(s) who performed the sampling or measurements;
- c. A precise description of both sampling methodology and the handling (custody) of samples;
- d. The date(s) analyses were performed;
- e. The individual(s) who performed the analyses;
- f. The analytical techniques or methods used; and
- g. The results of such analyses.

4. Monitoring of the nature of injected fluids shall comply with applicable analytical methods cited below.

5. All environmental measurements required by the permit, including, but not limited to measurements of pressure, temperature, mechanical integrity (as applicable) and chemical analyses shall be done in accordance with EPA guidance on quality assurance.

C. Monitoring Requirements

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the fluid to be analyzed and the procedure for analysis of the sample shall be in accordance with test procedures approved under 40 CFR § 136.3 unless otherwise approved by the Director. The permittee shall identify the types of tests and methods used to generate the monitoring data.

2. Continuous recording devices shall be used to monitor injection pressure, flow rate, cumulative volume and the annular pressure between the tubing and the long string casing.

3. The nature of the injected fluid shall be analyzed for the parameters listed below at the initiation of the injection operation. Thereafter, the injection fluid shall be analyzed every two years.

- pH
- Specific Gravity
- Specific Conductance
- Sodium
- Iron
- Magnesium
- Chloride

- Manganese
- Total Dissolved Solids
- Barium
- Hydrogen Sulfide
- Dissolved Oxygen
- TOC

4. A demonstration of mechanical integrity in accordance with 40 CFR § 146.8 shall be made at least once every five years on each well. Subsequent demonstrations shall be conducted no more than 30 days prior to the anniversary date of the initial demonstration. In addition to the above requirement, a mechanical integrity test demonstration shall be conducted whenever protective casing or tubing is removed from a well, the packer is resealed, or a well failure is evident. The permittee may continue operation only if he or she has successfully demonstrated to the Director the mechanical integrity of the permitted wells. The permittee shall cease injection operations if a loss of mechanical integrity becomes evident or if mechanical integrity cannot be demonstrated. Any such test shall be conducted in keeping with the notification requirements of Permit Condition D.11. of Part II of this permit. Results of this test shall be submitted with the first quarterly report after completion of the test.

5. Monitoring of the pressure buildup in the injection zone shall be performed annually. At a minimum, this will require the wells to be shut-in for a sufficient period of time to conduct a valid observation of the pressure fall-off curve. Results of this test shall be submitted with the first quarterly report after completion of the test.

D. Reporting and Notification Requirements.

1. Report on Permit Review. Within 30 days of receipt of this permit, the permittee shall report to the Director that he or she has read and is personally familiar with all terms and conditions of this permit.

2. Commencing Injection. The operator of a new injection well(s) may not commence injection until construction is complete, and

a. The permittee has demonstrated to EPA that the injection well(s) has/have mechanical integrity in accordance with 40 CFR § 146.8 and the permittee has received written notice from the Director that such demonstration is satisfactory;

b. The permittee has submitted notice of completion of construction (EPA Form 7520-10) to the Director; and

c. The Director has inspected or otherwise reviewed the new injection well(s) and finds it is in compliance with the conditions of the permit; or

d. The permittee has not received notice from the Director of his or her intent to inspect or otherwise review the new injection well(s) within 13 days of the date of the notice in paragraph (a) of this permit condition, in which case, prior inspection or review is waived and the permittee may commence injection.

3. Twenty-four Hour Reporting.

a. The permittee shall report to the Director any noncompliance which may endanger health or the environment. Any information shall be provided orally (phone numbers: (215) 597-9928 or 597-9898) within 24 hours from the time the permittee becomes aware of the circumstances. The following shall be included as information which must be reported orally within 24 hours:

(1) Any monitoring or other information which indicates that any contaminant may cause an endangerment to an underground source of drinking water.

(2) Any noncompliance with a permit condition, or malfunction of the injection system which may cause fluid migration into or between underground sources of drinking water, or failure of mechanical integrity test demonstrations.

b. A written submission shall also be provided within five days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

4. Anticipated Noncompliance. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

5. Other Compliance. The permittee shall report all other instances of noncompliance not reported at the time monitoring reports are submitted. The reports shall contain the information listed in Permit Condition D.3., of Part II of this permit.

6. Planned Changes. The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility.

7. Conversion. The permittee shall notify the Director thirty days prior to the conversion of the well to an operating status other than an injection well.

8. Temporary Abandonment. The permittee shall notify the Director prior to the temporary abandonment of an injection well.

9. Quarterly Reports. The permittee shall submit quarterly reports (using EPA Form 7520-11) to the Director summarizing the results of the monitoring required by Permit Condition C of Part II of this permit. These reports shall include each well's monthly average, maximum, and minimum values for injection pressure, flow rate, cumulative volume, and annular pressure, the results of any mechanical integrity test(s), and the results of any fluid analysis. The quarterly reports shall be submitted not later than April 30, July 31, October 31, and January 31. Each report will provide the required information from the previous three month period.

10. Plugging and Abandonment Reports and Notifications.

a. The permittee shall notify the Director 45 days before the plugging and abandonment of the well. The Director may allow a shorter notice period upon written request.

b. Revisions to the Plugging and Abandonment Plan must be submitted to the Director no less than 45 days prior to plugging and abandonment. The Director must approve the revisions prior to the start of plugging operations.

c. Within 60 days after plugging the well, the permittee shall submit a report to the Director which shall consist of either:

(1) A statement that the well was plugged in accordance with the plan previously submitted to and approved by the Director; or

(2) Where actual plugging differed from the plan previously submitted, an updated version of the plan, on the form supplied by the Director, specifying the different procedures used. Any deviation from a previously approved plan, which may endanger Underground Sources of Drinking Water, is cause for the Director to require the operator to replug the well.

The report shall be certified as accurate by the person who performed the plugging operation.

11. Compliance Schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 30 days following each schedule date.

12. Mechanical Integrity Tests. The permittee shall notify the Director of his or her intent to conduct a mechanical integrity test at least 30 days prior to such a demonstration.

13. Cessation of Injection Activity. After a cessation of injection for two years the owner or operator shall plug and abandon the well in accordance with the Plugging and Abandonment Plan unless he or she:

a. Provides written notice to the Director; and

b. Describes actions or procedures, satisfactory to the Director, that the permittee will take to ensure that the well will not endanger USDWs during the period of temporary abandonment. These actions and procedures shall include compliance with the technical requirements applicable to an active injection well unless waived in writing by the Director.

E. Mechanical Integrity Standards

1. Standards. The permittee shall have and maintain the mechanical integrity of the permitted injection(s) well pursuant to 40 CFR § 146.8.

2. Request from Director. The Director may, by written notice, require the permittee to demonstrate mechanical integrity at any time.

PART III

A. Construction Requirements

1. Notwithstanding any other provision of this permit, the injection well(s) shall inject only into formations which are separated from any underground source of drinking water by a confining zone that is free of known open faults or fractures within the Area of Review.

2. Casing and Cementing. The permittee shall case and cement each well to prevent the movement of fluids into or between underground sources of drinking water. The casing and cement used in the construction of each well shall be designed for the life expectancy of the well and, at a minimum, the operation shall be conducted in accordance with the construction details described in the permittee's permit application as well as any conditions

highlighted below. However, in all cases cemented surface casing shall be installed from the surface to a depth at least fifty feet below the lowermost underground source of drinking water, each subsequent string of casing shall be cemented back to at least 50 feet above the base of the next longest casing string and the injection zone shall be isolated by the placement of a tubing and packer inside the long string casing.

3. Logs and Tests. At a minimum the following logs and/or tests shall be conducted during the drilling and construction of each injection well: For surface casing intended to protect underground sources of drinking water: gamma ray, resistivity, and caliper prior to the casing being installed and a cement bond/variable density or temperature log after the casing is set and cemented. For intermediate and long string casings: gamma ray, resistivity, porosity and caliper prior to the casing being installed and a cement bond/variable density or temperature log after the casing is set and cemented.

The permittee shall submit a narrative report that interprets log and test results which specifically relate to the results of the cementing operation. Further, the narrative shall detail the rationale used to make these interpretations. The narrative report shall be prepared by a knowledgeable log analyst and submitted to the Director. The Director may prescribe additional logs or waive logging requirements in the future should field conditions so warrant.

4. Mechanical Integrity. Injection operations are prohibited until the permittee demonstrates that the well covered by this permit has mechanical integrity in accordance with 40 CFR § 146.8 and the permittee has received notice from the Director that such a demonstration is satisfactory in accordance with the provisions of Condition D.2. of Part II of this permit.

5. Corrective Action. Injection operations are prohibited until the permittee has successfully performed the activities detailed in the Corrective Action Plan, specified in Attachment C of the permit application and hereby incorporated.

6. Formation Data. The permittee shall determine or calculate the following information concerning the injection formation and submit it to the Director prior to operation as part of the completion report:

- a. Fluid pressure and temperature;
- b. Estimated fracture gradient; and
- c. Physical and chemical characteristics of the injection zone.

7. Completion Reports. The results of those activities required in Part III, Section A, 1 through 5 of this permit must be summarized and submitted to the Director prior to the commencement of injection operations as part of the Completion Reports.

B. Operating Requirements

1. Injection Formation. Injection shall be limited to the Devonian Shales, Huntersville, Oriskany, Clinton and Clinch Formations in the subsurface interval below 6000 feet and above 8600 feet.

2. Injection Fluid. The permittee shall not inject any hazardous substances, as defined by 40 CFR 261 nor any other fluid, other than the brine fluid generated from the Class III solution mining process.

3. Injection Volume Limitation. The facility's injection volume shall not exceed 1800 barrels per day. The monthly average for the facility shall not exceed 960 barrels per day (or a total of 28,800 barrels per month).

4. Injection Pressure Limitation. Injection pressure, measured at the surface, shall not exceed 1590 psi. Injection at a pressure which initiates new fractures or propagates existing fractures in the injection zone or in the confining zone adjacent to the injection zone or causes the movement of injection or formation fluids into an underground source of drinking water is prohibited.

5. Injection between the outermost casing protecting underground sources of drinking water and the well bore is prohibited, as is injection into any USDW.

6. The annulus between the tubing and the long string casing shall be filled with fresh water and a corrosion inhibitor additive. A minimum positive pressure of 100 psi shall be maintained on this annulus for monitoring purposes throughout the operation.

C. Plugging and Abandonment.

1. Plugging and Abandonment. The permittee shall plug and abandon the well as provided in the approved plugging and abandonment plan in Attachment Q (EPA Form 7520-14) of the permit application, which is hereby incorporated, and in accordance with the reporting and notification provisions of Section D.9. of Part II of this permit.

2. Plugging and Abandonment shall be conducted in such a manner that movement of fluids will not be allowed into or between underground sources of drinking water.

D. Financial Responsibility

1. The permittee shall maintain continuous compliance with the requirement to maintain financial responsibility and resources to close, plug and abandon the underground injection well in the amount of at least \$15,000 per well. If the acceptability of the Surety Bond with Standby Trust Agreement should change, the permittee shall provide advance notification to the Director. The permittee shall not substitute an alternative demonstration of financial responsibility for that which the Director has approved, unless he or she has previously submitted evidence of that alternative demonstration to the Director and the Director notifies him or her that the alternative demonstration of financial responsibility is acceptable. The Director may require the permittee to submit a revised demonstration of Financial Responsibility if the Director has reason to believe that the original demonstration is no longer adequate to cover the costs of plugging and abandonment.

2. Insolvency of Financial Institution. In the event of the bankruptcy of the trustee or issuing institution of the financial mechanism, or a suspension or revocation of the authority of the trustee institution to act as trustee or the institution issuing the financial mechanism to issue such an instrument, the permittee must immediately notify the Director and submit an alternative demonstration of financial responsibility acceptable to the Director within sixty days after such event.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III

841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

MAR 24 1997

Mrs. Janice Barbrow
Branch Supervisor
Saltville Public Library
Main Street
Saltville, VA 24370

RE: Final UIC Permit Modification, VAS1X932BSSMY - Virginia Gas
Pipeline Company, Saltville, Virginia

Dear Mrs. Barbrow:

The U. S. Environmental Protection Agency has approved a major permit modification under the authority of the Federal UIC Regulations at 40 CFR, Section 144 to the above referenced company. This permit modification reflected a change in the intended injection zone for the disposal of the brine fluid as well as revised the maximum injection pressure permissible during operation. The company's three Class 1X wells are located at the Saltville Storage Project in Saltville, Virginia. A copy of this final permit is enclosed since you agreed to act as a repository for public information pertaining to this permit. Please make this permit modification a part of the repository of record.

Thank you for your cooperation in this matter. If you have any questions, please contact me at 215-566-5454.

Sincerely,

Lillie R. Ellerbe

Lillie R. Ellerbe
Permits Coordinator
Safe Drinking Water Act Branch
(3WP32)
Office of Compliance and Enforcement

Enclosure



Mr. Byron T. Fulmer, Director
Department of Mines, Minerals and Energy
Division of Oil and Gas
Post Office Box 1416
Abingdon, VA 24210

Mr. Charles Gates
Virginia Department of Environmental
Quality
Southwest Regional Office
Post Office Box 1688
Abingdon, VA 24212

Mrs. Janice Barbrow
Branch Supervisor
Saltville Public Library
Main Street
Saltville, VA 24370

Mr. Frank Merendino
Vice President
Virginia Gas Pipeline Company
Post Office Box 2407
Abingdon, VA 24212

I, Lillie Ellerbe, certify that on 3/24/97 copies of the
final permit modification were mailed to the above
parties.

From: LILLIE ELLERBE
To: R3PA1.R3OPM.WOJNAR-KATHY, R3PA1.R3OPM.SHANHOLTZ-RO...
Date: 2/26/97 2:57pm
Subject: Receiving Report/7P-3025-NASA -Reply

>>> THERESA DIFIORE 02/25/97 10:29am >>>
2/25/97

SUBJECT: U.S. EPA Region III Receiving Report
FROM: Kathy Wojnar/Rosemarie Shanholtz (3PM30)
TO: Lillie Ellerbe (3WP32)

Please complete items one (1) and/or (2) below for:

Vendor: Family Community Newspapers
Purchase Order No.: 7P-3025-NASA
Invoice Number: 688 Date: 1/31/97
Amount: \$344.25

Please reply via the **LAN** to Kathy Wojnar/Rosemarie Shanholtz with a cc: to Rosalind Wilson and Theresa DiFiore within **3 days** of receipt of this message.

(1) I verify that I have received and/or accepted the goods/services (Please complete both A and B):

A. Received -- YES X DATE 1/29/97 NO ___

B. Accepted -- YES X DATE 1/29/97 NO ___

COMMENTS: (if any)

(2) If partial receipt, complete item (1) and please explain:

CC: R3PA1.R3OPM.DIFIORE-THERESA, R3PA1.R3OPM.WILSON-RO...

From: THERESA DIFIORE
To: R3PA2.R3WATER.ELLERBE-LILLIE
Date: 2/25/97 10:29am
Subject: Receiving Report/7P-3025-NASA

2/25/97

SUBJECT: U.S. EPA Region III Receiving Report
FROM: Kathy Wojnar/Rosemarie Shanholtz (3PM30)
TO: Lillie Ellerbe (3WP32)

Please complete items one (1) and/or (2) below for:

Vendor: Family Community Newspapers
Purchase Order No.: 7P-3025-NASA
Invoice Number: 688 Date: 1/31/97
Amount: \$344.25

Please reply via the **LAN** to Kathy Wojnar/Rosemarie Shanholtz with a cc: to Rosalind Wilson and Theresa DiFiore within **3 days** of receipt of this message.

(1) I verify that I have received and/or accepted the goods/services (Please complete both A and B):

A. Received -- YES___ DATE___ NO___

B. Accepted -- YES___ DATE___ NO___

COMMENTS: (if any)

(2) If partial receipt, complete item (1) and please explain:

CC: Wojnar-Kathy, Shanholtz-Rosemarie

UNITED STATES

ENVIRONMENTAL PROTECTION AGENCY

REGION III

841 Chestnut Building

Philadelphia, Pennsylvania 19107-4431



GROUND INJECTION CONTROL (UIC) PROGRAM NOTICE OF PERMIT MODIFICATION

The United States Environmental Protection Agency, Region III, announced on January 2, 1997, the issuance of two final permits under the authority of the Federal Ground Water Protection Administration (FGWA) at 40 CFR Parts 144.139, 144.140 and 144.141 to the Virginia Gas Company, Virginia. The company has been authorized to construct and operate three (3) Class IIG injection wells and three (3) Class IX injection wells used for the disposal of salt and the disposal of the produced fluid (brine) from the gas processing process, respectively. The wells are to be located at the Saltville site in Saltville, Virginia. A federal permit is required to meet the requirements of the EPA administered UIC program in Virginia.

On January 2, 1997, EPA received a letter from Virginia Gas Company requesting that the Class IX permit, identified as VAS1X932BSMY, be modified. Specifically, the company has requested that EPA modify the permit to reflect a change in the injection zone for the disposal of the brine fluid as well as to revise the maximum injection pressure permissible during operation. EPA has reviewed the test data (e.g. injectivity testing of the Price Formation was conducted on December 11 and 12, 1996) submitted with the January 2, 1997 letter, the request for these modifications, and has found the information acceptable. EPA is therefore approving the following permit modification:

Part III.B.1., Injection Formation. This condition has been modified as follows:

"Injection shall be limited to the Price Formation in the subsurface interval between 5884 feet and 6000 feet." Previously, this condition read, "Injection shall be limited to the Price Formation, Union Shales, Huntersville Chert, Oriskany, Clinton, and Clinch in the subsurface interval below 6000 feet and above 8600 feet."

Part III.B.4., Injection Pressure Limitation. This condition has been modified as follows: "Injection pressure, measured at the surface, shall not exceed 1000 psi." Previously, this condition permitted a maximum injection pressure of 1000 psi.

In addition to the modification of these two permit conditions, EPA is requiring the Virginia Gas Company to determine whether there were any additional wells within the prescribed area of review that penetrate the intended injection zone and could provide conduits for fluid migration out of the injection zone. The company found that there are no additional wells within the area of review that penetrate the Price Formation. Also, prior to EPA providing the permit modification, the Virginia Gas Company will be required to plug the existing injection well back from its current depth to a depth of at least 25 feet below the intended injection interval in the Price Formation.

Under sections 144.39 and 144.41 of the UIC regulations requires that any major modification be provided the opportunity for public comment. As such, EPA is providing public comment on the proposal to issue this permit modification for the Virginia Gas Company.

The Administrative Record for this permitting action is available for public review during normal business hours at the office of UIC program in the Safe Drinking Water Act Branch of EPA Region III in Philadelphia, Pennsylvania. All information submitted by the applicant, unless deemed confidential, is available to the public at the above location. A copy of the modified permit is available for review at the Saltville Public Library, Main Street, Saltville, Virginia.

EPA solicits public comment on the proposal to issue a modification to the permit for this facility. A public hearing has been tentatively scheduled for January 14, 1997, at 7:00 PM at the Town Hall Square, Corner of Palmer Avenue and Main Street, Saltville, Virginia. However, this hearing will be held only if there is a significant degree of interest expressed in the permit modification and this office has received written requests for a public hearing. Such written requests must state the issues to be raised and must be submitted no later than January 10, 1997, to the contact person listed below. EPA expressly reserves the right to cancel this hearing unless a significant degree of public interest is evidenced.

Interested persons may obtain further information, including copies of the permit by contacting Lillie Ellerbe, Safe Drinking Water Act Branch, U.S. EPA Region III, 841 Chestnut Building, Philadelphia, Pennsylvania 19107-4431, phone at (215) 566-5454.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III

841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

JAN 28 1997

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mrs. Janice Barbrow
Branch Supervisor
Saltville Public Library
Main Street
Saltville, Virginia 24370

RE: UIC Permit Modification - VAS1X932BSMY - Virginia Gas Company, Abingdon, VA

Dear Mrs. Barbrow:

Enclosed is the information pertaining to the permit modification for the Virginia Gas Company, Abingdon, Virginia. On April 29, 1996, EPA issued two final permits under the authority of the Federal UIC Regulations at 40 CFR Parts 124, 144, 146 and 147 to the Virginia Gas Company. The company has requested that EPA modify the VAS1X932BSMY permit to reflect a change in the intended injection zone for the disposal of the brine fluid as well as revise the maximum injection pressure permissible during operation. Virginia Gas has also requested a transfer in the ownership of the permit to the Virginia Gas Pipeline Company, Abingdon, Virginia.

During our recent telephone conversation you agreed to permit us to once again use the Saltville Public Library as the repository for public information pertaining to the enclosed modified permit. This package contains the Public Notice, related correspondence and permit.

Please refer any questions to me at the address above or by telephone at 215-566-5454.

Sincerely,

Lillie R. Ellerbe

Lillie R. Ellerbe
Permits Coordinator
Safe Drinking Water Act Branch (3WP32)
Office of Compliance and Enforcement

Enclosure

Stick postage stamps to article to cover First-Class postage, certified mail fee, and charges for any selected optional services (See front).

1. If you want this receipt postmarked, stick the gummed stub to the right of the return address leaving the receipt attached, and present the article at a post office service window or hand it to your rural carrier (no extra charge).

2. If you do not want this receipt postmarked, stick the gummed stub to the right of the return address of the article, date, detach, and retain the receipt, and mail the article.

3. If you want a return receipt, write the certified mail number and your name and address on a return receipt card, Form 3811, and attach it to the front of the article by means of the gummed ends of space permits. Otherwise, affix to back of article. Endorse front of article RETURN RECEIPT REQUESTED adjacent to the number.

4. If you want delivery restricted to the addressee, or to an authorized agent of the addressee, endorse RESTRICTED DELIVERY on the front of the article.

5. Enter fees for the services requested in the appropriate spaces on the front of this receipt. If return receipt is requested, check the applicable blocks in item 1 of Form 3811.

Form 3800, April 1995 (Reverse)

• Print your name, address

LILLIE R. ELLERBE
U.S. EPA, K
841 CHESTNUT
PHILADELPHIA, PA

WFD, 13th Floor

ORDER FOR SUPPLIES OR SERVICES

PAGE 1 OF 1 PAGES

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

1. DATE OF ORDER 1/22/97	2. CONTRACT NO. (If any) N/a	3. ORDER NO. 7D-3025-NASA	4. REQUISITION/REFERENCE NO.
5. ISSUING OFFICE (Address correspondence to) EPA, Region III 841 Chestnut Building Philadelphia, PA 19107		6. SHIP TO: (Consignee and address, ZIP Code) Same As #5	
7. TO: CONTRACTOR (Name, address and ZIP Code) The Smyth County News & Messenger c/o Family Community Newspapers P.O. Box 640 Marion, VA 24354 Attn: Mary Stack 1-800-655-1411 540-783-9713 (Fax)		8. TYPE OF ORDER <input type="checkbox"/> A. PURCHASE — Reference your _____ Please furnish the following on the terms and conditions specified on both sides of this order and on the attached sheets, if any, including delivery as indicated. This purchase is negotiated under authority of: <input type="checkbox"/> B. DELIVERY — Except for billing instructions on the reverse, this delivery order is subject to instructions contained on this side only of this form and is issued subject to the terms and conditions of the above-numbered contract.	

9. ACCOUNTING AND APPROPRIATION DATA Account No: 97E03L466X Object Class: 2568 2415 DCN: L FOL 38	10. REQUISITIONING OFFICE Lillie R. Ellerbe, SDWA Branch (3WP32) 566-5454
11. BUSINESS CLASSIFICATION (Check appropriate box(es)) <input checked="" type="checkbox"/> SMALL <input type="checkbox"/> OTHER THAN SMALL <input type="checkbox"/> DIS-ADVANTAGED <input type="checkbox"/> WOMEN-OWNED	

12. F.O.B. POINT Destination	14. GOVERNMENT B/L NO. N/A	15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date) January 29, 1997	16. DISCOUNT TERMS Net 30
13. PLACE OF INSPECTION AND ACCEPTANCE Philadelphia, PA			

17. SCHEDULE (See reverse for Rejections)

ITEM NO. (A)	SUPPLIES OR SERVICES (B)	QUANTITY ORDERED (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)	QUANTITY ACCEPTED (G)
	Public Notice - Virginia Gas Co. The contractor shall furnish the necessary personnel, material and services, except as otherwise specified, to perform the services for paid advertising as specified herein as attachment a. <u>TEAR SHEET IS REQUIRED.</u> This is a firm order ONLY if your price does not exceed the maximum line item or total price in the Schedule. Submit invoices to the Contracting Officer. If you cannot perform in exact accordance with this order, WITHHOLD PERFORMANCE and notify the Contracting Officer immediately, giving your quotation.	1	13 1/2"	\$8.50 Not to exceed 40 1/2"	Column Inch exceed \$344.25	

Please reference Purchase Order number (Block #3) on invoice.

18. SHIPPING POINT	19. GROSS SHIPPING WEIGHT	20. INVOICE NO.	\$344.25	17(H). TOT. (Cont. pages)
21. MAIL INVOICE TO: (Include ZIP Code) EPA, Region III, Chief, Financial Management Section (3PM30) 841 Chestnut Bldg., Philadelphia, PA 19107			Not to Exceed \$344.25	17(I). GRAND TOTAL

22. UNITED STATES OF AMERICA BY (Signature) 	23. NAME (Typed) Rosalind Wilson TITLE: CONTRACTING/ORDERING OFFICER
--	--

NSN 7540-01-152-8083

50347-101

OPTIONAL FORM 347 (10-83)
Prescribed by GSA
FAR (48 CFR) 53.213(e)

PUBLIC VOUCHER FOR ADVERTISING

DEPARTMENT OR ESTABLISHMENT, BUREAU OR OFFICE U.S. Environmental Protection Agency, Region III		For Agency Use Only
PLACE VOUCHER PREPARED Philadelphia, PA 19107	DATE PREPARED 1/22/97	VOUCHER NUMBER 7P-3025-NASA
NAME OF PUBLICATION The Smyth County News & Messenger		PAID BY
NAME OF PUBLISHER OR REPRESENTATIVE c/o Family Community Newspapers Mary Stack 1-800-655-1411		
ADDRESS (Street, room number, city, State, and ZIP code) P.O. Box 640 Marion, VA 24354		

CHARGES

TYPEFACE	(size of type)	POINT PER	(inch, square, word, or folio)
	NUMBER OR LINES (Indicate counted or space)	COST PER LINE	TOTAL COST
Line Rates	FIRST INSERTION	\$	\$
	ADDITIONAL INSERTIONS GIVE NUMBER ▶		
	TOTAL		\$
	NUMBER OF UNITS (Indicate inch, square, word, folio)	COST PER UNIT	TOTAL COST
Other Rates	FIRST INSERTION Block Display	3" x 13½ = 40½"	\$ 8.50
	ADDITIONAL INSERTIONS GIVE NUMBER ▶ None		
	TOTAL One (1)		\$ Not to Exceed \$344.25
Attach one copy of advertisement (including upper and lower rules) to each copy of voucher here. If copy is not available sign the following affidavit.		TOTAL LINE RATES AND OTHER RATES	
		LESS DISCOUNT AT %	
		BALANCE DUE \$	
		VERIFIED (Initials)	

AFFIDAVIT

This represents a true billing for the attached advertising order, with specifications and copy, which has been completed.

SIGNATURE OF PUBLISHER OR REPRESENTATIVE

TITLE

DATE

FOR AGENCY USE ONLY

ADVERTISEMENT PUBLISHED IN	DATE PUBLISHED
I certify that the advertisement described above appeared in the named publication and that this account is correct and eligible for payment.	
SIGNATURE AND TITLE OF CERTIFYING OFFICER	DATE
SIGNATURE AND TITLE OF AUTHORIZING OFFICER	DATE
ACCOUNTING CLASSIFICATION Account No: 97E03L466X Object Class: 2568-2418 DCN: 1, 10015	PAID BY CHECK NUMBER

¹ If the ability to certify and authority to approve are combined in one person enter "N/A" (not applicable) here

GPO : 1988 0 - 215-255

ADVERTISING ORDER

7P-3025-NASA
ORDER NUMBER

DEPARTMENT OR ESTABLISHMENT, BUREAU OR OFFICE

U.S. Environmental Protection Agency, Region III

DATE

1/22/97

The publisher of the publication named below is authorized to publish the enclosed advertisement according to the schedule below provided the rates are not in excess of the commercial rates

charged to private individuals with the usual discounts. It is to be set solid, without paragraphing, and without any display in the heading unless otherwise expressly authorized in the specifications.

NAME OF THE PUBLICATION ADVERTISED IN

The Smyth County News & Messenger

SUBJECT OF ADVERTISEMENT

Public Notice - Virginia Gas Co.

EDITION OF PAPER ADVERTISEMENT APPEARED

Weekly

NUMBER OF TIMES ADVERTISEMENT APPEARED

One (1)

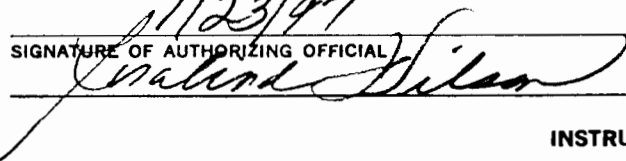
DATE(S) ADVERTISEMENT APPEARED

1/29/97

SPECIFICATIONS FOR ADVERTISEMENT

Please publish as a display ad in the regular text of the paper (i.e., not as a legal notice or classified ad). Please use appropriate scale agency logo in display; EPA LOGO SHEET enclosed. Please place prominently on face page. FORWARD TEAR SHEET WITH BILL TO: Kathy Wojnar (3PM30), U.S. EPA, Region III, 841 Chestnut Bldg., Philadelphia, PA 19107 (215) 566-5192.

COPY FOR ADVERTISEMENT

AUTHORITY TO ADVERTISE		INSTRUMENT OF ASSIGNMENT	
NUMBER	7P-3025-NASA	NUMBER	
DATE	1/23/97	DATE	
SIGNATURE OF AUTHORIZING OFFICIAL		TITLE	

INSTRUCTIONS TO PUBLISHERS

Extreme care should be exercised to insure that the specifications for advertising to be set other than solid be definite, clear, and specific since no allowance will be made for paragraphing or for display or leaded or prominent headings, unless specifically ordered, or for additional space required by the use of type other than that specified. Specifications for advertising other than solid and the advertisement copy submitted to the publisher will be attached to the voucher. The following is a sample of solid line advertisement set up in accordance with the usual Government requirements.

DEPARTMENT OF HIGHWAYS & TRAFFIC,
D.C. Bids are requested for first spring 1966 cement concrete repair contract, including incidental work, Washington, D.C., Invitation No. C-5576-H, consisting of 11,000 sq. yds. PCC Class BB sidewalk repair and 2,000 cu. yds. PCC Class A pavement, alley, & driveway repair, both cut repairs only. Bidding material available from the Procurement Officer, D.C. Sealed bids to be opened in the Procurement Office at 3:00 p.m., November 16, 1966.

Your bill for this advertising order should be submitted on the "Public Voucher for Advertising" form, which is printed on the reverse of this form, immediately after the last publication of the advertisement. If copies of the printed advertisement are not available, complete the affidavit provided on the voucher. Submit the voucher and a copy of the printed advertisement to ▶.....

IMPORTANT

Charges for advertising when a cut, matrix, stereotype or electrotype is furnished will be based on actual space used and no allowance will be made for shrinkage.

In no case shall the advertisement extend beyond the date and edition stated in this order.

PURCHASING ORDER TERMS AND CONDITIONS

- 52.252-2. CLAUSES INCORPORATED BY REFERENCE (APR 84) ---This contract incorporates the following terms and conditions by reference with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available:
- 52.203-3 Gratuities (APR 84)
- 52.212-9 Variation in Quantity (APR 84) (In the preceding clause, the permissible variations are stated in the schedule)
- 52.222-3 Convict Labor (APR 84)
- 52.222-26 Equal Opportunity (APR 84)
- 52.222-35 Affirmative Action for Special Disabled and Vietnam Era Veterans (APR 84)
- 52.222-36 Affirmative Action for Handicapped Workers (APR 84)
- 52.222-37 Employment Reports on Special Disabled Veterans and Veterans of the Vietnam Era (JAN 86)
- 52.222-40 Service Contract Act of 1965, as amended--Contracts of \$2,500 or Less (MAY 89)
- 52.222-41 Service Contract Act of 1965, as amended (MAY 89)
- 52.225-3 Buy American Act--Supplies (JAN 94)
- 52.232-1 Payments (APR 84)
- 52.233-1 Disputes (MAR 94)
- 52.243-1 Changes--Fixed Price (AUG 87)
- 52.249-1 Termination for Convenience of the Government (Fixed Price) (Short Form) (APR 84)

1552.213-70 NOTICE TO SUPPLIERS OF EQUIPMENT (APR 1984)

(a) It is the general policy of the Environmental Protection Agency that Contractor or vendor prescribed leases or maintenance agreements for equipment will NOT be executed.

(b) Performance in accordance with the terms and conditions of the vendor's commercial lease, or customer service maintenance agreement, unless specified in the Schedule, may render the vendor's performance unacceptable, thereby permitting the Government to apply such contractual remedies as may be permitted by law, regulation, or the terms of this order.

(End of clause)

Sections 144.39 and 144.41 of the UIC regulations requires that any major permit modification be provided the opportunity for public comment. As such, EPA is soliciting public comment on the proposal to issue this permit modification for Virginia Gas Company.

The Administrative Record for this permitting action is available for public inspection during normal business hours at the office of the UIC program in the Safe Drinking Water Act Branch of EPA Region III in Philadelphia, Pennsylvania. All information submitted by the applicant, unless deemed confidential, is available to the public at the above location. A copy of the modified permit is available for public inspection at the Saltville Public Library, Main Street, Saltville, Virginia.

EPA solicits public comment on the proposal to issue a modification to the final UIC permit for this facility. A public hearing has been tentatively scheduled for March 11, 1997, at 7:00 PM at the Town Hall Square, Corner of Palmer Avenue and Stadium Drive, Saltville, Virginia. However, this hearing will be held only if there is a significant degree of interest expressed in the permit modification and this office receives written requests for a public hearing. Such written requests must state the nature of the proposed issues to be raised and must be submitted no later than February 28, 1997, to the contact person listed below. EPA expressly reserves the right to cancel this hearing unless a significant degree of public interest is evidenced.

Interested persons may obtain further information, including copies of the modified permit by contacting Lillie Ellerbe, Safe Drinking Water Act Branch (3WP32), U.S. EPA Region III, 841 Chestnut Building, Philadelphia, Pennsylvania 19107, or by phone at (215) 566-5454.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III

841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

UNDERGROUND INJECTION CONTROL (UIC) PROGRAM

NOTICE OF PERMIT MODIFICATION

The United States Environmental Protection Agency, Region III, announced on April 29, 1996, the issuance of two final permits under the authority of the Federal UIC Regulations at 40 CFR Parts 124, 144, 146 and 147 to the Virginia Gas Company, Abingdon, Virginia. The company has been authorized to construct and operate three (3) Class IIIG injection wells and three (3) Class IX injection wells used for the solution mining of salt and the disposal of the produced fluid (brine) from the solution mining process, respectively. The wells are to be located at the Saltville Storage Project in Saltville, Virginia. A federal permit is required to meet the provisions of the EPA administered UIC program in Virginia.

On January 2, 1997, EPA received a letter from Virginia Gas Company requesting that the Class IX permit, identified as VASIX932BSMY, be modified. Specifically, Virginia Gas Company has requested that EPA modify the permit to reflect a change in the intended injection zone for the disposal of the brine fluid as well as to revise the maximum injection pressure permissible during operation. EPA has reviewed and analyzed the test data (e.g., injectivity testing of the Price Formation was conducted on December 11 and 12, 1996) submitted with the January 2, 1997 letter, to support the request for these modifications, and has found the information submitted acceptable. EPA is therefore approving the following permit modifications.

1. Part III.B.1., Injection Formation. This condition has been modified as follows: "Injection shall be limited to the Price Formation in the subsurface interval between 5610 feet and 5884 feet." Previously, this condition read, "Injection shall be limited to the Devonian Shales, Huntersville Chert, Oriskany, Clinton, and Clinch Formations in the subsurface interval below 6000 feet and above 8600 feet."

2. Part III.B.4., Injection Pressure Limitation. This condition has been modified as follows: "Injection pressure, measured at the surface, shall not exceed 2250 psi. ..." Previously, this condition permitted a maximum injection pressure of 1590 psi.

In addition to the modification of these two permit conditions, EPA required Virginia Gas Company to determine whether there were any additional wells within the permits prescribed area of review that penetrate the intended injection zone and could provide conduits for fluid migration out of the injection zone. The Company found that there are no additional wells within the area of review that penetrate the Price Formation. Also, prior to EPA providing authorization to inject into the Price Formation, Virginia Gas will be required to plug the injection well back from its current depth to a depth of at least 25 feet below the lowest intended injection interval in the Price Formation.





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III

841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

JAN 28 1997

Ms. Karen Tolbert
Town Hall Square
Post Office Box 730
Saltville, Virginia 24370

RE: Public Hearing for Virginia Gas Pipeline Company, Abingdon, Virginia - Permit
Modification

Dear Ms. Tolbert:

This letter serves as confirmation of our telephone conversation. On April 29, 1996, EPA issued two final permits under the authority of the Federal UIC regulations at 40 CFR parts 124, 144, 146 and 147 to the Virginia Gas Company. The company has requested that EPA modify the VAS1X932BSMY permit to reflect a change in the intended injection zone for the disposal of the brine fluid as well as revise the maximum injection pressure permissible during operation. Virginia Gas has also requested a transfer in the ownership of the permit to the Virginia Gas Pipeline Company, Abingdon, Virginia. This project is located at the Saltville Storage, Washington and Smyth Counties, Saltville, Virginia.

The hearing will be announced through an advertisement in the Smyth County-News and Messenger on or about January 29, 1997. The hearing will be announced for 7:00 PM on March 11, 1997 at the Town Hall Square, Corner of Palmer Avenue and Stadium Drive, Saltville, Virginia. Your assistance in securing these arrangements is appreciated.

EPA reserves the right to cancel the hearing unless a significant degree of public interest is generated. You will be advised if this public hearing is canceled before the hearing date.

I will be contacting you shortly before the hearing date to obtain directions and to arrange our preparations. In the interim, please feel free to contact me at (215) 566-5454 with any questions you may have on these arrangements or the project in general.

Sincerely,

Lillie R. Ellerbe
Permits Coordinator
Safe Drinking Water Act Branch (3WP32)
Office of Compliance and Enforcement

Printed on Recycled Paper



Deadline
Sat - Med at 5:00
Wed - Mon at 5:00

INJECTION WELL
FACILITY NAME:

TOWNSHIP: _____

COUNTY: Smyth & Washington

NEWSPAPER CONTACTED:

The Smyth County News & Messenger
Family Community Newspapers
P.O. Box 640
Marion, VA 24354
Mary Stack
Nancy Hoge
1-800-655-1411
x12

540-783-9713 (FAX)

BLOCK DISPLAY AD

3"x5"=15"

PRICE RATE PER COLUMN INCH:

8.50

TOTAL COST:

127.50

IS THIS A DAILY PAPER:

YES

NO

IS THERE MORE THAN ONE EDITION:

Yes

N

IS THIS A WEEKLY PAPER:

YES

NO

WHAT DAY IS IT PUBLISHED

Thurs
Sat.

CALL MAIN LIBRARY IN THE AREA:

NAME/ADDRESS/LIBRARIAN:

540-496-5514

Mrs. Janice Barlow
Branch Supervisor
Saltsville Public Library
Main Street
Saltsville, VA 24370

Tell Librarian about to issue permit for injection well in county.

Would Librarian be willing to be main repository for information
pertaining to this? This would be reference for interested people in area -
consist of summary sheet.

Get Name and address for local Township Building:

Ms. Karen Tolbert
Town Hall Square
P.O. Box 730
Saltsville, VA 24370

540-496-5342

Location: Corner of Palmer
Ave & Stadium Drive

Hearing: 3/11/97
7:00 - 9:00 PM